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Understanding Study and Executive Function Skills 1

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List of Forms

Table 1.3
Executive Function and Study Skill Sets

EXECUTIVE FUNCTION	SKILL SET	RELEVANCE TO LEARNING
Inhibition	Self-regulation	This strategy stresses the importance of maintaining a calming presence under various circumstances in school.
	Self-management	Self-management involves assuming responsibility for one's own actions; changing one's behavior as necessary.
	Self-control	Recognizing and managing antecedents to behavior is essential to learning to control one's own behavior.
Cognitive flexibility	Time management	Time management involves efficient and effective use of one's time to meet everyday expectations and assignments.
	Cooperative learning	Cooperative learning provides learners with opportunities to work collaboratively to efficiently and effectively complete everyday tasks and develop positive social interactions in timely and flexible ways.
	Reference sources	Once identified, flexible use and application of resources is an essential skill in our ever-changing world.
	Active processing	This strategy activates prior knowledge and relates it to the content being studied to use in flexible ways in new learning.
Working memory	Graphic aids	Graphic aids are advance organizers that facilitate effective immediate use of important material necessary for task completion.
	Semantic webs	Semantic webs are illustrations that serve to provide students with immediate opportunities to recall existing knowledge to connect with new knowledge.
	Rehearsal	This strategy facilitates student reflection on a task before, during, and after its completion while accessing information for immediate use.
	Analogy	This strategy helps with the recall of previously learned content, skills, and information to connect with new learning that resembles previous learning.
Organization	Educational management	Educational management helps students manage personal demands and organize everyday school and home tasks.
	Test taking/ preparation	This strategy helps students organize how to best prepare for and take tests, identify and use clue words, and correct previous test-taking errors.
	Note taking/ outlining	This strategy helps students efficiently record and organize notes for current and future use.
	Written reports	This strategy helps students organize thoughts in writing using proper grammar, sentence structure, and punctuation.
	Coping	Coping is a systematic process to organize ways to resolve difficult situations.
	Evaluation	Evaluation strengthens awareness of what must be done to successfully complete a task.

Questions to Ponder That Are Addressed in This Chapter

1. In what ways would Brandon benefit from activating his prior knowledge about how to complete an existing task by reflecting on how he was successful with a similar previous task?

2. How might an individualized time-management program help Brandon in his learning so he spends less time managing his belongings and more time engaged with instructional tasks?

3. In what ways might a highly predictable classroom structure help Brandon be more flexible in how he engages in a one-on-one situation with a peer to complete a task he enjoys and is successful with in school?

What Is Cognitive Flexibility?

Cognitive flexibility includes the ability to effectively move (i.e., transition) from one cognitive task or situation to another and to respond appropriately to the new situation that requires new or different mental tasks (Archambeau & Gevers, 2018). This executive function also reflects one's tolerance for the ability to consider multiple viewpoints expressed by others that may diverge from one's own views (Diamond, 2013) (i.e., being sufficiently flexible to consider alternate views). This function to make the necessary mental "shift" in the classroom is essential to success with daily tasks and interactions across the school day, week, month, and year. Students who struggle with cognitive flexibility may be characterized as inflexible, rigid in thinking or behavior, and unable to move without incident from one task or situation to another, both emotionally and physically. A learner's struggles with cognitive flexibility may manifest itself in the following ways in the classroom (Cooper-Kahn & Dietzel, n.d.; Meltzer, 2014; Will et al., 2014):

- Perseveration on a task or behavior exhibiting limited task-switching abilities
- Inability to think in a flexible way, thereby responding inappropriately to a new situation
- Difficulty moving freely in the classroom to maintain connections with the flow of instruction along with changing instructional expectations
- Unwillingness to switch to a different topic in an assignment, even though insufficient material exists to adequately complete the assignment
- Difficulty adapting to unfamiliar or unexpected situations, especially when needing to physically transition to a new task or setting
- Maintenance of unreasonable use of the same approach or tactic; being unable to recognize that a new or different approach may be necessary to resolve a new issue or conflict

Learners with productive and functional cognitive flexibility exhibit strength-based skill sets (Archambeau & Gevers, 2018; Cooper-Kahn & Dietzel, n.d.; Diamond, 2013), such as the ability to (a) refocus attention, (b) successfully alternate between two or more tasks, (c) be flexible in thinking how best to respond to a new situation or question, and (d) draw on a menu of approaches to complete different tasks or be successful in a social situation. Cognitive flexibility also requires thinking about ideas, tasks, or situations from others' perspectives (Diamond, 2013). The use of study skills and strategies reflects features of cognitive flexibility when incorporated into daily instruction and classroom management. This chapter focuses on four study skills and strategies, illustrated in Table 3.1, that require cognitive flexibility on the part of the learners to be properly used in the classroom. When applied appropriately, the four skill sets in turn further develop and strengthen cognitive flexibility as this function undergirds successful use of each skill shown in Table 3.1.

Time Management

Time management refers to learners' abilities to monitor and manage their own time to create efficient and effective structures leading to successful task completion. This skill set is directly connected to

GENERAL SUGGESTIONS

- Emphasize the importance of organizing and managing one's own learning.
- Develop with the student a self-educational management plan, emphasizing the order for completing multiple tasks, timelines for completing each task separately and all tasks collectively, and measures for determining student success with the plan.
- Give students opportunities to self-monitor their educational management.
- Give students three interrelated tasks, and instruct them to generate a plan to successfully manage completion of all tasks within required timelines.
- Initiate fewer teacher-directed tasks, and help students use cooperative learning techniques (cognitive flexibility) to organize and complete assignments in small groups.
- Provide students with activities in which effective educational management and organization are central to successful completion.
- Allow students the opportunity to share their educational-management strategies with others in the classroom.
- Instruct students to keep a daily log of how they organized their daily activities at school and home and to evaluate the implementation of that organization.

SCHOOL-FOCUSED SUGGESTIONS

- With the help of parents, examine ways to organize students' lockers using shelves, hooks, and magnetized items (e.g., writing surfaces). Items to "accessorize" one's locker (Goldberg & Zwiebel, 2005; Hasbrouck, 2002) can be purchased in office supply and other types of stores. For students who have more than one locker (e.g., school and dance class), this suggestion applies to all locker situations.
- Encourage students to keep backup supplies in their lockers (e.g., extra paper, writing instruments, chargers for calculators or cell phones, computer outlet cord, package of tissues, a small amount of money for lunch, bus, or emergencies).
- Provide systematic opportunities in the classroom for student-directed learning.
- With the help of parents and in consideration of the student's personal desires select a backpack that allows for effective organization of school items and personal effects (some backpacks are definitely better than others for organizing).
- Help students determine a way to manage homework assignments that fits their individual personal lifestyles.
- List important items (e.g., books, binders, computer, other supplies) that students need for each class, and post this on locker doors or insert in planners or other personal items that students carry. This list can also be input into an electronic device for easy access.
- If a specific class does not require the use of a binder or other organization system, consider using one to help students organize papers and other documents during the school day.
- Give students sufficient opportunities to organize and manage their own time and to implement that organization.
- Ensure that students are aware of the different ways in which study skills and executive functions can be used together to better manage learning.
- Provide pairs of students with a situation in which they are required to meet established proficiency levels while meeting established timelines. Instruct them to develop a plan for ensuring they meet both proficiency levels and time limits.

HOME SUGGESTIONS

- Create a work area for students to do their homework. This area should be cleared of most items and have a designated place for the student's computer, materials, supplies, and backpack.

Learning Strategy: Coping

Coping is a problem-solving strategy that helps students use an objective and systematic process for addressing difficult tasks or social situations by confronting issues, developing solutions, identifying the assistance that is necessary, attempting solutions, and persisting until task completion. Coping allows students to relate solutions directly to completed tasks or social situations, while simultaneously further developing the use of the organization executive function, which provides the opportunity for learners to problem solve in a positive, organized, and systematic way. Coping facilitates student learning by providing students with a structure to meet instructional challenges in productive ways, leading to task completion and positive interactions.

To use coping, teachers should first guide students to respond to and discuss predetermined items such as those posed in Form 5.12 (Coping Application Tool), within a few simple, defined steps. Once students have considered the items identified in Form 5.12, they should implement what was recorded on the form. On completion, use the select questions provided in Table 5.2 to help students evaluate how they resolved the problem and how well the coping exercise helped address the identified issue.

Table 5.2 and Form 5.12 are designed to work together by first providing students with existing structured items to plan the process and procedures for coping with the identified problem, followed by debriefing with the students as they evaluate the overall coping process and effects. However, each tool can be used independently of the other based on the instructional situation and the learner's needs.

Learning Strategy: Evaluation

Evaluation involves practices that facilitate student awareness of what must be done to successfully complete a task. Evaluation allows students to examine progress toward task completion using skills including (a) self-monitoring, (b) reflection, (c) generalization, (d) prediction, and (e) feedback (Hoover, 2018). Evaluation encourages students to judge the quality of their work through a structured process. Therefore, the evaluation skill set supports learners' abilities to improve their organization executive functioning by self-evaluating successful mastery of instructional tasks in the classroom. To use evaluation, teachers should first guide students to respond to and discuss predetermined items such as those posed in Form 5.13 (Evaluation Application Tool) within a few simple, defined steps.

Once students have considered the items identified in Form 5.13, they should implement what was recorded on the form. On completion, use the select questions provided in Table 5.3 to help students evaluate how well and to what extent they successfully completed the task. Table 5.3 and Form 5.13 are designed to work together by first giving students existing structured items to plan the process and procedures for completing an identified task, followed by debriefing with the students as they evaluate their overall success in completing the task as identified using Form 5.13. However, each tool can be used independently of the other based on the instructional situation and the learner's needs.

Concluding Thoughts

Organization is an executive function that draws on learners' abilities to successfully complete multiple tasks and requirements in an efficient manner to meet both time and task expectations in the teaching and learning environment. *Organization* refers to the ability to manage tasks and expectations by organizing materials, creating steps to complete tasks, and generating daily, weekly, or monthly structured sequences to be successful at school, at home, and in the community. Specifically, tasks such as generating written assignments, preparing for and taking tests, and taking notes require an organized approach for successful usage in the classroom. Different study skills and learning strategies contribute to the development and use of organization, of which six were presented in this chapter. Educational management, test preparation and test taking, note taking and outlining,