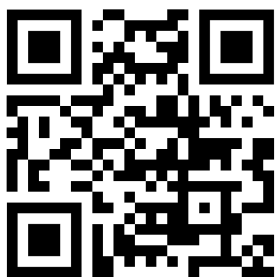


# NACU

## Executive Function Skills Resource Packet

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## Untapped Learning's Program Model

**We combine mentorship and movement to help students develop executive function skills, build confidence, and increase independence.**

We assess each student's needs and goals individually and pair them with a mentor based on personality, shared interests, and more. Mentors meet one-on-one with their students to create weekly plans that include homework assignments, study schedules for upcoming tests, project breakdowns, and extracurricular activities. Between sessions, mentors check in with students to hold them accountable to following their weekly plans. Students are encouraged to use Untapped's office hours as needed to receive subject-specific support and reinforce the EF skills they're working on with their mentors.

### Success by the Numbers

**86%**

of students report decreased levels of anxiety

**89%**

of students report their time management has improved since working with Untapped

**93%**

of students report increased academic confidence since working with Untapped

**90%**

of students report their organizational skills have improved since working with Untapped

**82%**

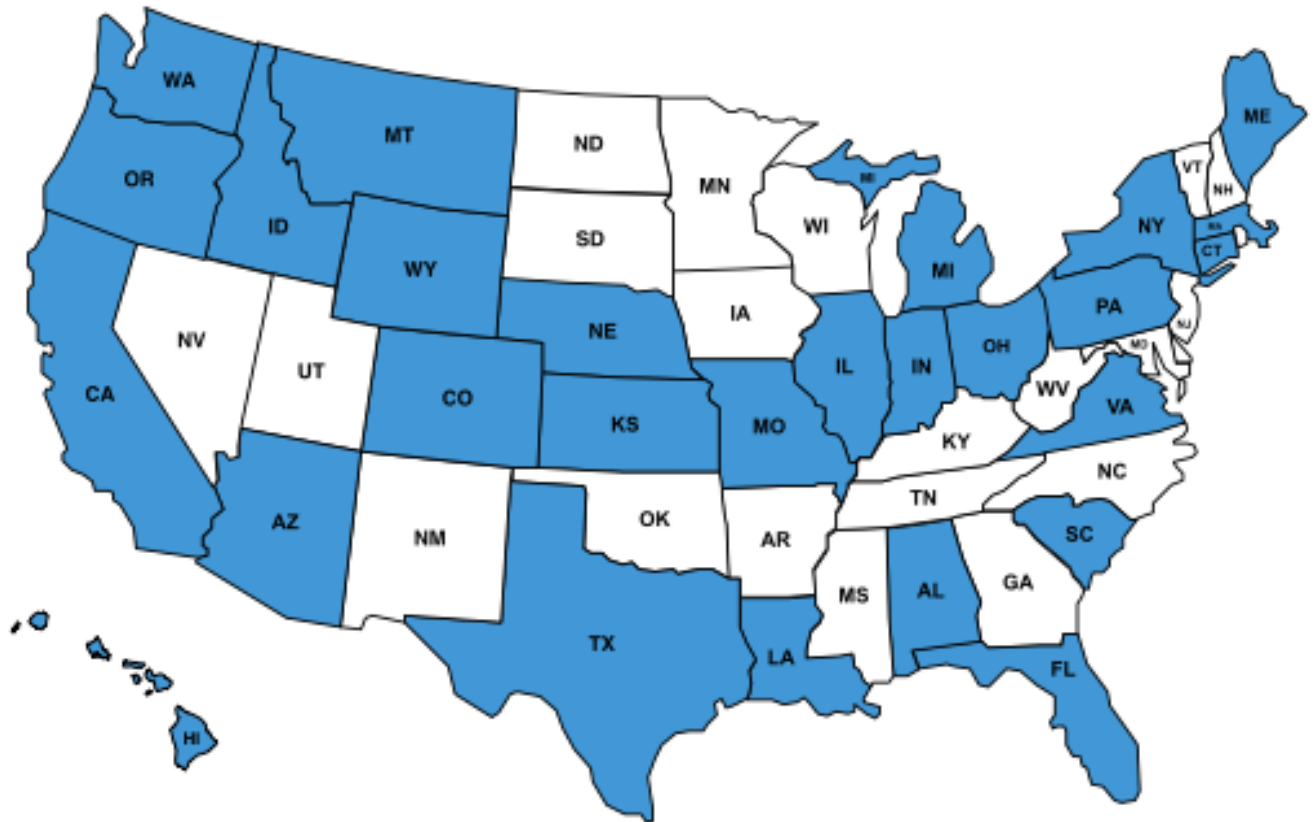
of first-time students at Untapped improve their GPA from their previous semester

**92%**

of students report decreased levels of overall anxiety since working with Untapped

**To see how Untapped creates successful students, check out [www.untappedlearning.com](http://www.untappedlearning.com)**

## Colleges our Students Attend



Arizona State University  
 Azusa Pacific University  
 Barnard College  
 Cal Poly - San Luis Obispo  
 Colby College  
 Colorado Christian University  
 Colorado College  
 Colorado Mesa University  
 Colorado Mountain College  
 Colorado School of Mines  
 Colorado State University  
 Columbia University  
 DePaul University  
 El Camino College  
 Florida State University  
 Fort Lewis College

Front Range Community  
 College  
 George Mason University  
 Glendale Community  
 College  
 Hastings College  
 Hillsdale College  
 Indiana University  
 Kansas State University  
 Loyola Marymount  
 University  
 Loyola University New  
 Orleans  
 Metro State University  
 Michigan State University  
 Montana State University  
 New York University  
 Northeastern University  
 Occidental College

Pacific Lutheran  
 University Penn State  
 University  
 Quinnipiac University  
 Red Rocks Community  
 College  
 Regis University  
 Rollins College  
 San Diego State University  
 Santa Clara University  
 Texas A&M University  
 Trident Technical College  
 Tulane University  
 University of Alabama  
 University of Arizona  
 University of Colorado -  
 Boulder  
 University of Colorado -  
 Denver

University of Denver  
 University of Hawaii  
 University of Idaho  
 University of Kansas  
 University of Maryland  
 University of Miami  
 University of Michigan  
 University of Missouri  
 University of Montana  
 University of Northern  
 Colorado  
 University of Oregon  
 University of Washington  
 University of Wyoming  
 Virginia Tech  
 Western State University  
 Whittier College  
 Wittenberg University

## What is executive function?

Executive function (EF) is the complex set of cognitive processes that allow you to achieve your goals. Whether your goal is as small as leaving your house early enough to get coffee before work and still be on time, or as big as hitting a yearly sales goal, there are the skills needed to get you there.



### An EF deficit may show up as:

- Poor time management, leading to difficulty in allocating time effectively for tasks and activities
- Disorganization in space and materials
- Frequently late or absent from appointments or commitments
- Missed deadlines due to forgetfulness or avoidance
- Difficulty following instructions or processes
- Challenges in adapting to unexpected changes or disruptions
- Procrastination and difficulty initiating tasks or requirements

Remember, individuals with EF deficits may not exhibit all of these signs, and the severity of the challenges can vary from person to person. Supporting individuals with EF deficits involves understanding their unique struggles and implementing strategies tailored to their needs.

## Developing Executive Function Skills

Research shows that implementing the following concepts improves executive function:

<b>Planning</b> It is well-established that good planners perform better in school than their less intentional peers. Some studies also show that planning is associated with lower levels of academic stress. A 2019 Journal of Learning & Memory study put it simply: “Successful students are better planners,” and the perception of self-control as a result of planning is a notable stress reliever.	<b>Movement</b> A holistic review of over 2,000 studies by The Journal of Pediatrics has found, overwhelmingly, that exercise predicts positive changes in academic performance by improving concentration, memory, and intellectual performance. Cardiovascular exercise increases blood flow to brain areas that impact memory, attention, and self-regulation.
<b>Organization</b> Educators and psychologists have found that organizational skills provide a strong explanation for low academic achievement. According to a study published in 2011, 98% of students who participated in a structured organizational training saw improvements to necessary organizational skills, resulting in better academic performance.	<b>Accountability</b> A constructive approach to accountability results in positive observations such as increased participation, feelings of competency, creativity, and innovation, as well as improved academic performance. People are 65% more likely to achieve a goal if they share it with someone else for accountability purposes.

# How to Support Students

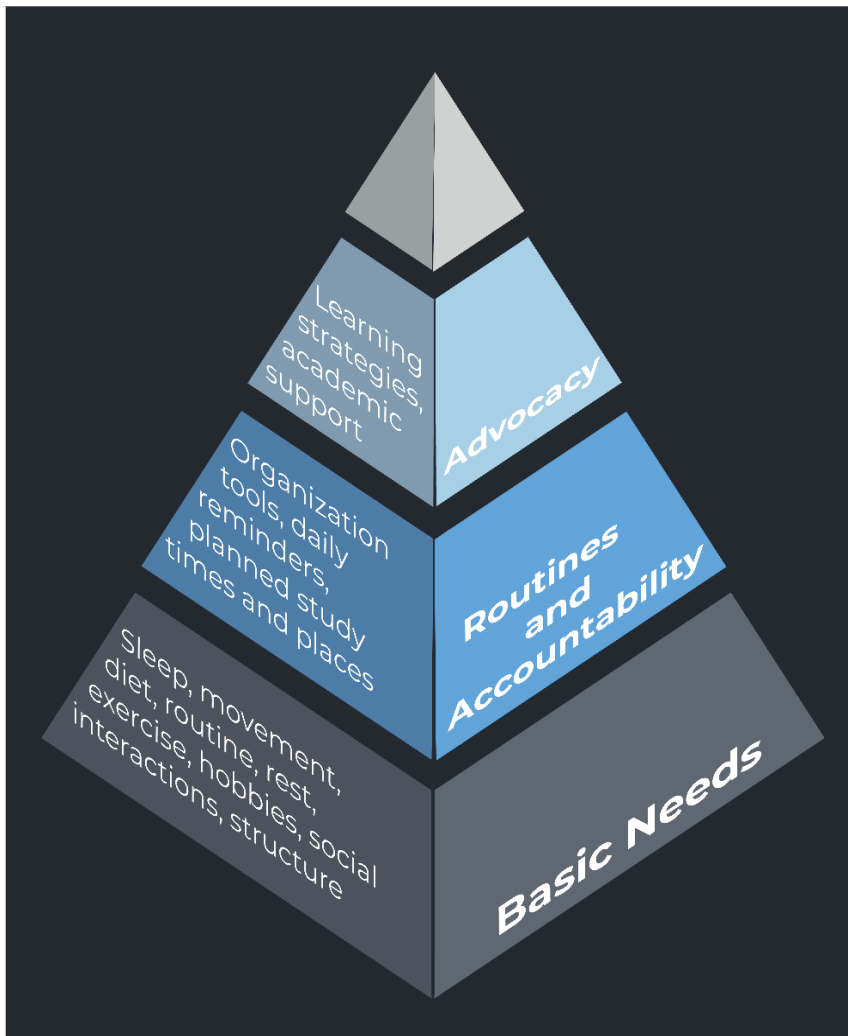
**Want to learn more about how Untapped supports students? Visit**

**[www.untappedlearning.com](http://www.untappedlearning.com)**

## Meeting Basic Needs

Many students struggle with the transition from the highly structured high school environments to the highly unstructured college environment. Students now not only have to manage their academic workload, but balance those responsibilities with their personal wellness, hygiene, social life, jobs, and other commitments.

Rather than building a solid foundation to their basic needs pyramid, many students try to jump straight to advocacy, learning strategies, office hours, and academic support. However, if students aren't able to manage things like sleep, diet, exercise, routines, organization, and accountability, their advocacy skills will fail. Try these with students to help them meet their basic needs:



- Incorporate at least 2 hours of exercise into their weekly routine
- Have your student pick consistent sleep and wake times to stick to during the week.
- Make sure they are eating at least two meals a day
- Schedule daily and weekly organizational routines around schoolwork
- Schedule time for chores and laundry
- Implement personal accountability systems, like planners and reminders apps
- Build a structured study routine into their daily and weekly routine
- Be sure to make space for free time!



## How to Advocate

Self-advocacy is the ability to speak up for yourself and your needs. Many students in college have not practiced advocating for themselves and may struggle with what to ask, what language to use, and when/how to reach out to their professors or administrators.

### Why Students Don't Advocate

- They are intimidated
- They don't know what to ask for
- They don't know how to ask for what they need or want
- Outdated stigmas prevent them from asking for help, and they feel alone/different

### Advocating Face to Face

One of the best ways for students to develop self-advocacy skills is to practice specific scenarios, out loud, with a partner. This helps students get comfortable with how to ask for what they want and prepares them for possible responses they might receive from professors or administrators.

For example:

*Student:* Hi, Dr. Smith. I have an away basketball game on Wednesday and I will have to miss class. I see on the syllabus that there's a writing assignment you'll be introducing that day, could I please have the prompts ahead of time so I don't get behind on the essay?

*Professor:* Hi, Sam, thanks for letting me know. I can email you the essay prompts right now. If you have any questions before Wednesday, please send me an email or come to my office hours to ask me.

*Student:* Great, thank you so much. Also, what is the best way to get class notes from the lecture on Wednesday? I don't really know anyone in the class.

*Professor:* There is already someone else in the class who takes notes for a student who has note-taking accommodations. I can give you their email so you can ask them for a copy of the notes.

## Advocating Over Email

If students are unable to attend class or your office hours, email is an appropriate way for them to advocate for themselves. If you have anxious or easily overwhelmed students, email is often a less stressful mode of communication. Just like with advocating in person, giving students examples of how to advocate for themselves over email is incredibly beneficial to them. Here is an example of an email template you can provide to your students:

*Subject:*

[Course name/code - section number] [Reason for emailing]

*Email:*

Dear [title] [last name],

[Reason for emailing]. Because of this [add specific request] [add other information that may be relevant]? If there are any issues with this, please let me know.

Thanks so much,  
[student name]

Here is how your students could fill out the template:

*Subject:*

ENG2001-20 Missing class 2/20 due to sickness

*Email:*

Dear Dr. Smith,

I have been diagnosed with the flu and will be unable to attend class on 2/20. Because of this, may you please send me a copy of the powerpoint slides after the lecture so I can reference them? I have already asked a classmate for notes. If there are any issues with this, please let me know.

Thanks so much,  
Natalie

## How to Study

In order to study effectively, students must develop an understanding of how they learn best. Study techniques, locations, mindsets, exercise, and nutrition are all factors that impact a student's ability to learn and retain course material.

### Example Reflection Questions

If your students need guidance around improving study habits, here are some questions for them to consider:

- Do you do your best work in the morning or at night?
- Do you typically study in a loud environment or quiet environment?
- Is there natural light in your study space?
- How tidy/organized is your study space?
- Do you learn better by studying in groups or studying alone?
- How often do you take breaks while you study?
- What types of breaks do you take while studying?
- Do you learn material better from lectures in class or by reading the textbook?
- What kind of lecture and reading notes do you take? Are they helpful?
- How often do you attend professors' office hours?
- Do you consistently understand homework assignments?
- Do you read all instructions, prompts, and rubrics thoroughly?
- How did you study for a test that you did well on? Can you apply those methods to other classes?
- What do you do after a test doesn't go well for you?
- Do you typically study in small chunks in advance of your due date, or are you prone to "cramming" right before?
- Do you notice any changes in your concentration after you exercise?
- Do you notice any changes in your ability to complete difficult tasks depending on what you eat beforehand?
- How do you perform on days when you didn't get much sleep the night before?
- Are there any test formats you do better with than others?
- Have you used resources on campus like writing centers or tutoring?

## Notecards and One-Pagers

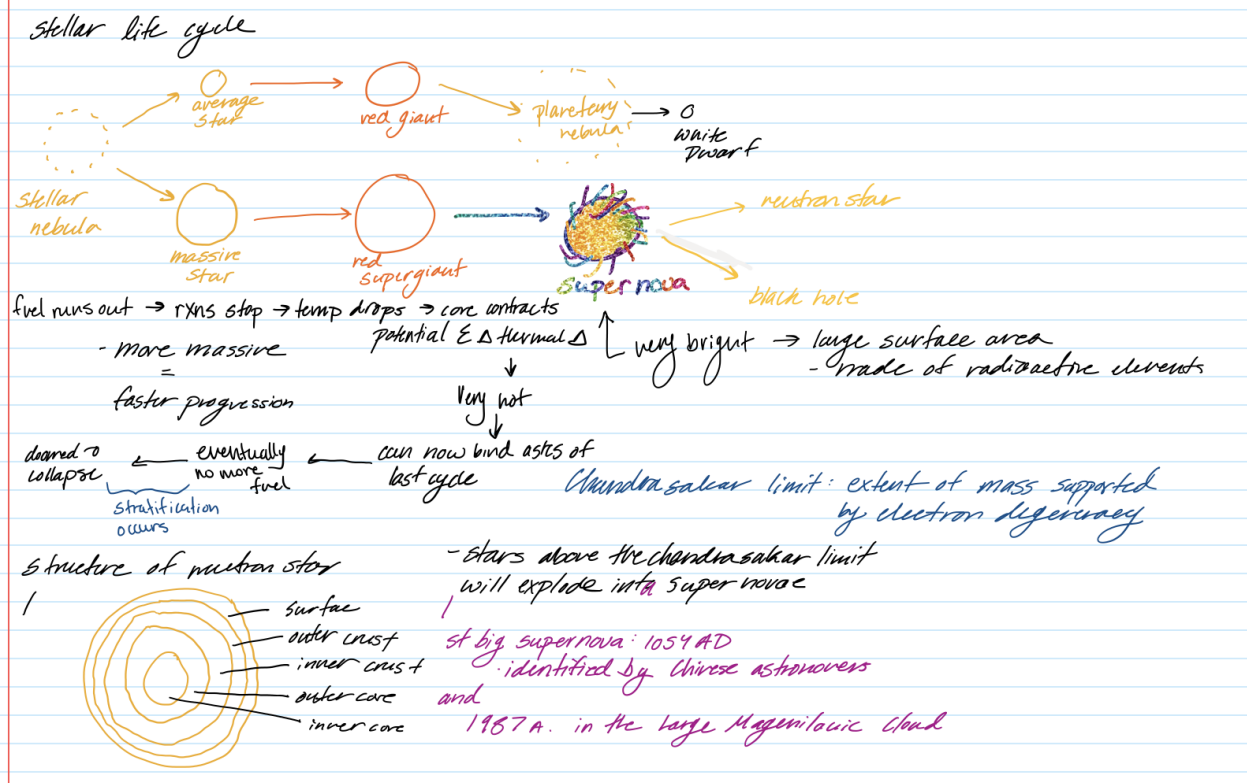
One of the best study methods for students is to make a notecard or one-pager of the material they will be tested on. Having to condense an entire unit's worth of information requires students to think critically about the content and helps them identify gaps in their understanding. As they work to write out all relevant material on their notecard or page, they spend focused time reviewing and then actively summarizing their notes.

A good one-pager should include brief descriptions of the main topic and be broken down into subsections. The use of color for different and drawing diagrams can also be beneficial. Below are two examples of effective one-pagers, the first covering a whole chapter's worth of material, and the second covering a shorter lesson.

One-pager from an astronomy module on the stellar life cycle:

### Module 6 summary

Thursday, December 15, 2022 14:35



# One-pager from a chapter on the biopsychology of psychiatric disorders:

## Chapter 18 summary

Monday, April 11, 2022 13:04

### Biopsychology of psychiatric Disorders

#### Schizophrenia

##### Symptoms:

delusions, hallucinations, inappropriate affect, Disorganized odd behaviour

##### Negative symptoms:

flat affect, avolition, catatonia

##### Causal factors:

genetics: parents/relative w/ schiz  
many linked genes

##### Birth effects:

Birth complications, maternal stress, prenatal infection  
epigenetics: urban birth, childhood adversity

##### Dopamine Theory:

Stems from success of Chlorpromazine in treating psychosis → although can generate extrapyramidal effects  
Thought that schiz produced by too much DA  
mirrored in cocaine and amphetamine addicts

##### However...

Chlorpromazine DOESN'T cause DA depletion (blocks receptors)  
BUT haloperidol doesn't act on receptors  
even though antipsychotics immediately block D<sub>2</sub> receptors effects aren't seen for weeks

#### Current Research and Treatment

##### 1. Atypical antipsychotics

Part act on D<sub>2</sub> receptors: rather 5-HT  
D<sub>1</sub> or D<sub>4</sub>  
not any more effective than originals but have less side effects  
glutamate has also been found to have an important role in psychosis

##### 2. psychedelics and schiz

LSD mirrors (+) schiz symptoms  
dissociative hallucinations mimic (-) symptoms  
→ glutamate antagonists

##### 3. genes:

may disrupt neural proliferation and migration or synaptic pruning, or glul GABA synaptic transmission

##### 4. Brain structure changes

enlarged ventricles and sulci  
↓ hippocampal, amygdala, thalamus and nucleus accumbens size  
(may be vulnerability)

#### NMDA receptor antagonists - Ketamine

- very effective, low dose w/ immediate and long effective

##### Brain Differences

↓ gray matter volume in:

prefrontal cortex · hippocampus · amygdala

· cingulate cortex

↓ White matter: frontal cortex

##### Monoamine Theory

↓ serotonin and NE causes depression  
upregulation of receptors

##### Neuroplasticity Theory

depression reduces neuroplasticity in hippocampus which causes downstream effects  
BDNF has gained interest due to its role as a biomarker for depression and neurogenesis

PBS and transcranial stimulation have seen success in depression treatment

#### Bipolar Disorder:

Type I and II  
mania hypomania

##### Causal Factors:

80-90% heritability

##### Brain Differences:

↓ medial prefrontal cortex, left anterior cingulate, left superior temporal gyrus, prefrontal regions and the hippocampus

atypical activation of:

frontal cortex, medial temporal lobe, BG

##### Treatments:

HPA dysregulation - circadian disruption

↓ BDNF

##### Treatment:

mood stabilizers:

lithium → protects from the toxicity of urea

decreases mania

##### Animal models

elevated plus maze  
defensive-burying test  
risk assessment test

##### Neural basis

prefrontal cortex, hippocampus and amygdala associated (no atrophy)

#### Tourette's Disorder

characterized by tics

##### Neural Basis

The suppression associated with activity in prefrontal cortex and caudate nuclei

increased tics are active in the striatum

kids with tics have thinning in sensorimotor cortex gray matter related to mouth and larynx

##### Treatment

antipsychotics

related to DA dependent structures

#### Depressive Disorders

##### Categories:

reactive depression endogenous  
triggered by some no obvious cause  
negative life event

Women 2x as likely to develop condition  
- very comorbid with other conditions

##### Causal Factors

genetic factors: 30-40%  
epigenetic factors  
hormones (postpartum depression)  
Sun (Seasonal Affective Disorder)

##### Antidepressant Drugs:

monoamine inhibitors  
tryptic antidepressants (block reuptake)  
SSRIs / SNRIs atypical antidepressants

##### Anxiety Disorders

general, specific, location based

##### Etiology

experience plays large role  
genetic predisposition  
neurotransmitter variations

##### Treatments:

Benzos: hypnotic / sleep drugs

can cause sedation

serotonin: agonists

anti-lytic effects without ataxia / sedation

##### Anti-depressants:

SSRIs and SNRIs

# Professional Development

**Interested in professional development training with Untapped? Visit**  
**[www.untappedlearning.com](http://www.untappedlearning.com)**

# Organizing Course Resources for Student Success

## Syllabus Recommendations

- ☐ Office hours, office location, and requirements (do students have to set an appointment in advance?) are posted clearly at the top of the professor's syllabus.
- ☐ Professor's email is hyperlinked in the syllabus, and expectations for how to communicate with them outside of class are provided.
- ☐ All course materials are clearly listed and hyperlinked (when possible) in the professor's syllabus.
- ☐ The citation style that will be used in the course, as well as linked style guides, are posted on the professor's syllabus.
- ☐ The grade categories, their respective weights, and the grading scale used in the course are clearly listed in the professor's syllabus.
- ☐ Tentative due dates are listed for all major assignments in the course, and there is a predictable pattern for those due dates.
- ☐ The syllabus is easy to find on the professor's online course page.
- ☐ The professor has a clear course schedule with all lectures, readings, assignments, quizzes, and exams listed on the syllabus.
- ☐ Any assignment that uses a rubric or instruction page is hyperlinked from the syllabus.
- ☐ When possible, professors request feedback from students or other professors to make sure the syllabus is clear and easy to follow.

## Working with Students with EF Deficits

What might seem simple or intuitive for students without EF deficits may be difficult or anxiety-provoking for students with EF deficits. Students with EF deficits also often process information differently than their peers. They often need further explanation of topics, or more time to think through concepts on assessments.

- Provide email templates and scripts for students on how to advocate for their accommodations. Regardless of if a student is familiar with accommodations or if they're new to the concept or process, approaching college professors can be very intimidating, and any guidance helps.
- Create an institutional template to optimize and standardize online resources, including learning management platforms like Canvas and Blackboard, so information is clearly labeled and readily accessible. Students benefit greatly from consistent (and therefore predictable) structure.
- Many students require assistance planning work. Establishing consistent assignment deadlines (like discussion posts are due at 9:00 pm on Thursdays) and frequent check-in points for long-term projects often promotes skill development for identifying subtasks and meeting deadlines.
- Test preparation may be a challenge for new college students who are not able to discern the relative importance of information presented over several weeks or months. Test preparation like in-class discussions, pre-formatted outlines, and review sessions help students prioritize study topics and master key information.
- Discuss what accommodations are available to students and which accommodations would be the most beneficial for them. Students may need help reflecting on their strengths and weaknesses. If there are any barriers to obtaining accommodations, like needing a diagnosis, make sure to outline the necessary steps for students to overcome those barriers.
- Provide step-by-step instructions on how to get accommodations finalized. **Make sure the disability services page on your institution's website is easy to find.** If possible, follow up with students to see if they need help completing any of the steps in this process.



**Interested in how Untapped Learning can  
support your students?**



**Contact us!**

[www.untappedlearning.com](http://www.untappedlearning.com)