

## A GUIDE TO ACADEMIC COACHING

Now that you know how to navigate the Students of Strength website, it's time to learn how to use its tools to build communities of strong students!



### THE ROLE OF AN ACADEMIC COACHING

Your mission is to cultivate the academic, intellectual, and personal development of your student. Don't do their homework for them.

You are not a teacher: you are a student like them, just more advanced. Your job is not to teach, but to model ideal student behavior.

Academic coaching is not a one-way transaction; think of it as a collaborative process. You can learn and grow from the experience as much as the student that you are coaching.





Before The Session

## WHEN YOUR SESSION IS ASSIGNED

Write your session time into your planner, Google Calendar, or whatever you use to organize your time.

Check that you can make the assigned time.

Do not directly contact your student if you realize that you can't make your scheduled session. Instead, please notify the Student Services Coordinator, tutors@studentsofstrength.com, at least 24, but preferably, 48 hours in advance.

Reach out to your student to find out what they need help with. Ask if they can send you problems, quizzes, passages, and/or assignments that have them stumped.



### WHEN YOUR SESSION IS ASSIGNED

Have the student to take the online Index of Learning Styles Questionnaire which is found at:

http://www.engr.ncsu.edu/learningstyles/ilsweb.html

Send the results to you electronically for your perusal before the session. Use your analysis of the results and any applicable notes from slides 9 - 18 to help guide your tutoring.



## THE DAY BEFORE

Ensure that you have read any notes about the student that have been left by the preceding academic coach, if this is not the student's first session.

#### Information should include:

- the last objective(s) that the student has / have been working on;
- problems, quizzes, passages, and/or assignments that have them stumped; and
  - the student's academic style and accompanying analyses based on the online Index of Learning Styles Questionnaire.



### ANALYZING THE STUDENT'S ASPECTS OF LEARNING

One approach to understanding the learning process from the student's perspective is contingent on a familiarity with various learning styles which involve cognitive, affective and behavioral aspects that are demonstrated consistently over time in an assortment of tasks (Guild, 1994).

According to a 1993 study by Dr. Richard Felder, there are five aspects / types of learners:

- 1. Sequential vs. Global learners
- 2. Sensing vs. Intuitive learners
- 3. Active vs. Reflective learners
- 4. Visual vs. Verbal learners
- 5. Inductive vs. Deductive learners



#### SEQUENTIAL LEARNERS

Sequential Learners	Instruction Style	Helping Themselves
Gain understanding in linear steps, with each step logically following	Construct a logical argument that addresses a specific	Students should Try to fill in or predict missing steps;
the previous one; are able to solve complex problems quickly or put things	support sequential	Ask for gaps to be filled in if they can't do it themselves;
together in novel ways once they grasp "the big picture", but they may have difficulty explaining how they did it.		Outline lecture material in logical order; and Associate what they already know with new material to strengthen global learning aspect.



### GLOBAL LEARNERS

Global Learners	Instruction Style	Helping Themselves
Tend to learn in large jumps, absorb material almost randomly without seeing connections, then suddenly "get it".	Academic coach should relate new information to previously learned information verbally to the student. The student should then receive homework that involves problemsolving that is relative to the new information.	Students must Understand their need for "the big picture" before they can master details; Seek out an overview of information; Immerse themselves in large blocks of individual subjects; Relate subjects with what is already known.



## **SENSING**LEARNERS

#### **Sensing Learners Instruction Style Helping Themselves** Tend to like learning facts, Give student a Students should... are practical, and careful; Seek out strategies to see description of physical they problem-solve by using how information connects phenomena from real dr well-established methods. simulated experiments, to real-world scenarios: They dislike complications, demonstrations, or Ask instructors / surprises work wit out academic coaches for presentations of specific examples of conreal-world connections and problem-solving cepts and procedures; being tested on material no (i.e - algorithms). previously taught. They are Find out how the concepts apply in practice via course patient with details and are texts, other references or good at memorizing facts brainstorming with someand doing hands-on work. one else.



### INTUITIVE LEARNERS

Intuitive Learners	Instruction Style	Helping Themselves
Prefer discovering possibilities, relationships and innovation. They work quickly and dislike repetition, memorization, and routine calculations. They grasp new concepts and are more comfortable with abstractions and mathematical formulations.	Use theories, mathematical models, and any material that emphasizes conceptual understanding.	Students should Ask for interpretations or theories that link facts, or try to find the connection themselves; Take extra time and care to read entire questions before answering; Double-check work to eliminate errors.



#### REFLECTIVE LEARNERS

Reflective Learners	Instruction Style	Helping Themselves
Think quietly about information to retain and understand it.	Encourage reflective learners to construct Minute Papers (Angelo & Cross, 1993) in which important points from class are summarized and written down in one minute.	think of ways that information can be



### VISUAL LEARNERS

Visual Learners	Instruction Style	Helping Themselves
Remember best what they see - pictures, diagrams, flow charts, time lines, films, demonstrations.	Tutors should use sketches, plots, vector diagrams, computer graphics or other visual demonstrations extensively.	Students should Write notes from lectures so that they will not forget it;  Consult reference books and other resources like anima- tions, YouTube videos, concept maps, and col- or-coded notes with all relative topics in same color, for retention.



### VERBAL LEARNERS

Verbal Learners	Instruction Style	Helping Themselves
Learn better from words written and spoken, but do not need to take detailed notes. Verbal learners only need to listen to lectures -with occasional diagrams or charts included.	of information present-	Students should read the textbook and write summaries or outlines in their own words; and/or Work in groups and explain material to each other often to be able to address questions that require deep understanding on exams.



## **INDUCTIVE**LEARNERS

#### **Inductive Learners Instruction Style Helping Themselves** Students should... Learn by examining the Provide students with a specifics of a situation set of data and several Work towards being able to develop over-arching through observations, guiding questions to principles from data to analyze data, formulate experimental results, nubetter retain information merical examples, devela hypothesis, and disand access learning. cover findings indeoping governing principles and theories via inference pendently. They experience deeper learning, longer retention of information, and greater confidence in problem-solving abilities.



# **DEDUCTIVE**LEARNERS

<b>Deductive Learners</b>	Instruction Style	Helping Themselves
Begin with general principles and deduce to consequences and applications. They prefer the highly structured presentation of lectures that progress from general to more specific information; therefore having the logic worked out by others; however, they usually learn less this way.	principles or laws to	Students should  Learn the dynamics of conceptual problems;  Be exposed to various problem-solving strategies to be able to independently find solutions.



## THE DAY BEFORE

If your student has sent you materials they've been having trouble with, look them over. Working through them is encouraged, but may not be necessary.

Formulate a plan for the session. Begin by coming up with a new session objective and brainstorm what materials and activities will help your student achieve it by the end of the session.

The following slide contains several types of sessions you may encounter and template lesson plans for them. These are merely suggestions. Feel free to plan your session in a manner that you think will be most effective.



# **COMMON**SESSION TYPES

The Homework Helper	The Test Prepper	The Skill Builder
Your student is struggling with a difficult assignment:  Begin by having your student explain to you what part of the homework they are having trouble with.  Explain the underlying concept. Use additional practice problems to build their confidence, then have them approach the homework again with a deeper understanding.	Your student is preparing for an important standardized test:  Have your student do a practice exam before the session.  Go over the areas they struggled with, connecting problems to the underlying concepts.  Then use worksheets from the S.O.S curriculum to help them improve those skills. Finish with test-taking advice.	Your student is having trouble with a specific skill or concept:  Begin by connecting the skill or concept to their preexisting knowledge and/or real life applications. Use a video from the S.O.S curri ulum to refresh them on the topic. Then go through a problem step-by-step that illustrates the skill or concept. Lastly, have your student solve a similar problem while explaining their thinking step-by-step back to you.



# **15-60 MINUTES**BEFORE

You should make contact with your student at least 7 minutes before the session begins.

Feel free to work from any location within reason, but make sure your work area is free of distractions (roommates, television, music, etc.)

Prepare any materials you will need for the session (paper, pencils, textbooks, etc.)



#### BE ON TIME

Not only does being late reflect poorly on you and Students of Strength as a whole, but you set a poor example for your tutee. Remember, an academic coach should be a model student.





## STRUCTURE OF THE SESSION

Like a well-structured essay, a well-structured coaching session should have a beginning, middle, and end.

#### Beginning:

Conduct a pre-assessment.

#### Middle:

Help student with the material they need help with.

#### End:

Summarize the essential points made, and reflect on the session.



### FIRST SESSION WITH A STUDENT

Spend five to ten minutes getting to know your student. What are their favorite subjects? What do they like doing outside of school? What do they want to be when they grow up? Where do they see themselves in the next 5 - 10 years?

Be sure to share a little bit about yourself too!

Make it clear what your goals, responsibilities, and boundaries are as an academic coach.



#### SESSION OBJECTIVE

At the end of the pre-assessment, present your student with the objective for the session, and make sure they understand it.

Be sure and take the results of your pre-assessment into consideration, and adjust your objective accordingly.

Alternatively, you can ask the student to write their own objective with your help.

The most important thing to keep in mind when creating session objectives is growth. How will you design this session to make a student grow? Beyond just learning new information or skills, they should be able to leave the session with a deeper understanding of the material.



# **DIVIDE AND**CONQUER

Break challenging material into parts.

Identify the specific part of the material (for example, a particular step in the process of solving a problem) that your student finds most confusing.

Focus the session on this particular part and how it fits into the whole.



### **DEEP**PROCESSING

Often students struggle because they memorize the procedure to solve problems without true comprehension of the ideas behind them. This is called **shallow processing**.

As an academic coach, part of your work is train your students to engage in **deep processing**— completely understanding the meaning behind what they're studying.

To encourage deep processing, focus on training and directing, not showing and telling. Instead of just telling your student how to solve a problem, ask them questions that will guide them through the problem.



#### **QUESTIONING** TECHNIQUES

In a concerted effort to not tell students the answers to questions and ensure that they are building their metacognition skills, ensure that you ask questions that:

- elicit deeper thinking;
- foster greater student confidence;;
- build upon what the students already know
- are conducive to securing better comprehension of the material; and
- lead the student to applying new information to situations or problems.



#### **Exploratory Questions**

To help student recall basic information. Ask these at the beginning of the session to evaluate what the student already knows and where there might be gaps in information or understanding.

Examples: "What is kinetic energy?" "What is a vector?"

#### **Challenge Questions**

Ask students to question their assumptions, conclusions, and interpretations. Help students to correct errors in their thinking on their own as opposed to being told what to think. This self-corection strategy facilitates learning the correct approach to a specific type of problem.

Example: "If there is no gravity in space, how does the Earth stay in orbit around the sun? Are they any other explanations that could account for these findings?"



#### **Relational Questions**

Ask students to compare similarities and differences among concepts. This helps to develop a mental concept map of learning and pushes students beyond memorization of facts onto real learning.

Example: "What is the relationship between potential and kinetic energy?"

#### **Diagnostic Questions**

Ask students to describe underlying concepts or processes. Helps to bolster the confidence of students when they are able to demonstrate comprehension of the material by providing explanations.

Example: "Why did you use the Pythagorean Theorem for this problem?"



#### **Action Questions**

Ask the student what they would do, or what others should do. Once a student has a fair gasp of a concept, these questions may be asked to gauge their ability to apply what they know to new situations. In math and physics, for example, try to use examples that are different from what the student may have just studied instead of just using the same problem with different numbers.

Example: "What is the first thing you should do when setting up this type of problem?"

#### **Cause and Effect Questions**

Ask the student to identify causal relationships between ideas or events. These questions can help you check that your student understands underlying, causal relationships and ensures that they are not just memorizing equations or facts.

Example: "Why did the hydrogen atom lose its electron in this reaction?"



#### **Summary Questions**

Ask student to summarize or synthesize what they have learned so far.

Questions are useful near the end of a tutoring session to check the student's understanding or throughout the session to ensure that your student is on the right track.

Example: "Can you repeat that explanation back to me in your own words?"

#### **Priority Questions**

Ask the student to identify the most important cause or issue. Be sure to follow up with a "why" question for explanation of reasoning and avoidance of short answers. These questions also push a student's thinking beyond surface facts.

Example: "Based on what you've studied, what is the most significant factor in determining infant mortality rates in developing countries?"



#### **Hypothetical Questions**

Change the facts or conditions of a problem and ask your student to draw a conclusion. These questions require students to apply concepts to a different situation rather than explaining what is already given. These are good questions for reinforcing a student's understanding after they successfully finished a problem. A few of these types of questions should be used in the following tutoring session to gauge student learning.

Example: "How would your solution change if the mass were moved by a constant force instead of being attached to a spring?"

#### **Extension Questions**

Ask the student to identify the most important cause or issue. Be sure to follow up with a "why" question for explanation of reasoning and avoidance of short answers. These questions also push a student's thinking beyond surface facts.

Example: "Based on what you've studied, what is the most significant factor in determining infant mortality rates in developing countries?"





Metacognition

#### METACOGNITION DEFINED

Metacognition is an awareness and understanding of one's own thought processes, especially regarded as having a role in directing those processes. One of the most important practices of an academic coach is to teach students **how** to think and therefore, learn. This is accomplished by teaching students to think about what and how they are thinking. This is **not** an automatic process.

"Learning how to learn cannot be left to students. It must be taught." (Gall et al, 1990)

"To make an individual metacognitivly aware is to ensure that the individual has learned how to learn." (Garner, 1988)



## METACOGNITION TRAINING STUDENTS TO LEARN EFFICACIOUSLY

At Students of Strength, we are Academic Coaches - we tutor, we mentor, we are college advisors. We are competent, confident and well-informed scholastic trainers. One of our most important practices is instructing our students on **how** to learn.

Promoting student metacognition means teaching our tutees to think about how they are thinking about their academic pursuits and how they approach learning about science, technology, engineering, and mathematics (NRC, 2000; D'Avanzo, 2003; Crowe et al., 2008).

What follows are some strategies to increase tutee's attention to metacognition, including explicitly, training tutees to use metacognitive strategies and practices.





Metacognition Strategies

### 1. PRE-ASSESMENTS

### ENCOURAGING STUDENTS TO EXAMINE THEIR CURRENT THINKING

It is important that student know their level of comprehension and to engage in self-questioning. Therefore, before engaging in new material, successful students ask:

"What do I already know about this topic that could guide my learning?"

Strategy / Rationale: Assign the tutee a take like writing three self-questions that are relative to three separate homework assignments from the week. When this is accomplished, the practical reason for pre-assessment becomes helping the tutee to thoughtfully plan their approach to learning new ideas.



### 2. THE MUDDIEST POINT

### GIVING STUDENTS PRACTICE IN IDENTIFYING CONFUSIONS

The Muddiest Point is an active learning strategy that can be employed during the tutoring session. Even though it is usually done as an in-class, quick-write on an index card for 1, 3, or 5 minutes, it can be used at the end of a tutoring session to address the self-question:

"What was most confusing to me about the material being explored in class or our session today?" (Angelo & Cross, 1993)

Rationale: This strategy is useful to both the tutor and tutee in gauging what is challenging or unclear. Train the tutee to identify areas of confusion, embrace the challenge, work on and contend with the confusion as they participate in the learning activities in the sessions.



# THE MUDDIEST POINT RATIONALE

Giving students practice in identifying confusions creates an opportunity to change the student and our community of students into a community of strong students.

We are coaching students to be self-efficacious when encountering confusion instead of self-conscious.

Many teachers long to know when their students are having trouble understanding new material, but too often, students do not have the metacognitive tools to make a good self-assessment, or lack the confidence to express their confusion in the classroom environment. Students of Strength session provide the safe environment needed to endow students with strategies that will bolster their confidence and carry over to the classroom and beyond (Tanner, 2012).



### 3. POST-ASSESSMENTS

### PUSHING STUDENTS TO RECGONIZE CONCEPTUAL CHANGE

Cognitive psychologists and science education experts explain learning as a student-centered activity, whereas students modify their conceptions concerning a subject (Posner et al., 1982).

Students find it difficult to learn new information when they forego metacognitive realizations required to examine their initial thoughts on a topic in comparison to later understandings; therefore, reflecting on an experience is the key step in learning (Dewey, 1933).

A tool for explicitly getting students to think about how their ideas are (or are not) changing is a retrospective post-assessment, which can be done by asking the student to complete the phrase:



"Before this course, I thought evolution was...Now I think that evolution is..."

# RETROSPECTIVE POST-ASSESSMENTS

Alternatively,

"How is my thinking changing (or not changing) over time?"

Additionally, you might ask your tutee to write about three ways in which their thinking about a given topic has changed over a given period of time.

Either of these explicit approaches to teaching metacognition is a mechanism of training students to self-question.



### 4. REFLECTIVE JOURNALING PROVIDING A FORUM FOR SELF-MONITORING THINKING

A goal the constituents of our community of strong students is for all of us to be analytical about what does or does not work well and how to use that information to find a solution to approaching scholarly challenges.

#### Strategy:

Assign something as simple as a low-stakes, low-points writing assignment after an exam that the tutee I concerned about;

Ask the tutee to reflect and write a brief letter to their future self. The letter should address:

"What about my exam prep worked well that I should remember to do next time? What did not work so well that I should not do next time or that I should change?"



# REFLECTIVE JOURNALING RATIONALE

This explicitly gives students a strategy for developing metacognitive approaches, as well as practice using that approach in the context or their disciplinary course.

Additionally, students can be asked to share their strategies with fellow students and to identify at least two new exam preparation strategies used by their peers. By students writing about their metacognitive thinking and learning strategies regularly, a reflective journal is created.

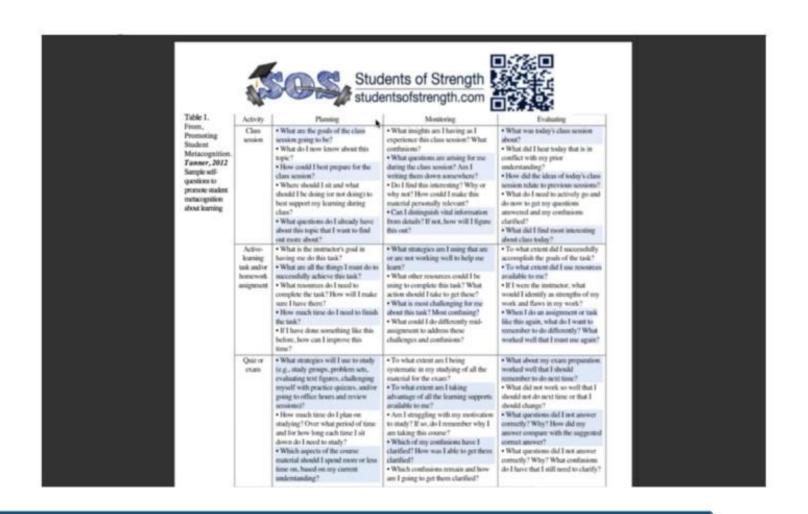


# PROMOTING STUDENT METACOGNITION APPLICATION

The next two slide contain two tables which have been design to assist your in coaching your tutee on how to plan, monitor and evaluate their thinking in class, during active learning tasks or homework and on quizzes and exams.



# PROMOTING STUDENT METACOGNITION TABLE 1 (TANNER, 2012)





# PROMOTING STUDENT METACOGNITION TABLE 2 (TANNER, 2012)





# **COACHING**TECHNIQUES

Use confident but not intimidating body language.

Make sure the tone of voice and vocabulary you use is appropriate for the student's grade level.

Engage in active listening: pay close attention to what your student is saying, indicate that your are listening by using non-verbal cues like nodding, and feed back what the student is saying (paraphrase, summarize, etc.).

Make connections between ideas and subjects, and point out any real world applications.

Encourage your students to engage with their course materials (textbooks, notes, etc.) during the session.



Make use of analogies to explain difficult concepts in a simple way.

# WHAT IF YOU DO NOT KNOW THE ANSWER?

Regardless of how skilled you are at the subjects you are coaching, you may end up in a situation where you can't answer a question your student has, or don't know how to solve a problem your student needs help with.

In this situation, the most important thing to do is be honest. Tell your student that you are stumped, and that you will be in contact them after the session to help them once you figure the question out for yourself. Don't waste valuable time during a session struggling to solve something you're stuck on.

In addition to consulting search engines, textbooks, and the SoS curriculum, you can ask a question of your peers on the Facebook group for Students of Strength academic coaches.



# **SESSION** RECAP

Summarize the main points you covered in the session.

Walk through a process or break down a passage one last time.

Give your student resources and advice to help them move forward in their understanding on their own.





### **STUDENT** FEEDBACK

Encourage students to give feedback on your academic coaching. What worked and what didn't? This will enable you to become a better academic coach, as well as identify your student's learning style.

Be sure and leave notes about the session on the Students of Strength website. They will be helpful to other coaches who may work with your student. Focus on areas of confusion, background, and learning style.



# STUDENTS OF STRENGTH JOURNAL

Academic coaches are encouraged to keep a Students of Strength journal to record and reflect on their sessions.

Here are a few questions to consider when writing your journal entries:

What kind of techniques or examples did the student respond to best?

What did the student have trouble with?

Did the student seem motivated and engaged?



# PREPARE FOR FUTURE SESSIONS

If there was anything you didn't have time to cover during your session, briefly summarize it in a message to your student. Ask them if they are interested in covering it during your next session.

If you were unable to help your student with any material, spend some time consulting online resources and fellow academic coaches to formulate an answer or explanation to send to your student. It may be worth going through during your next session as well.

If you have access to your student's course materials, look ahead at what they will be covering in the near future.

Be sure to leave notes to ensure a smooth transition during the next session.



# PREPARE FOR FUTURE SESSIONS

Notes for future sessions should include:

Data from the Index of Learning Styles Questionnaire

Objectives that the student has been working on

Noted areas of difficulty (as evidenced by the pre-assessment)

Any questions that may not have been addressed in the previous session



### YOU ARE A MODEL

#### Remember, YOU ARE A MODEL!

As scholars, we often think metacognitively, reflect on our current understanding of our research and scour over old notes or essays to see how our ideas have evolved over time to assess the acquisition of new knowledge. Showing students explicitly how you, as a successful student think procedurally in solving a problem - how you start, how you decide what to do first, then next, how you check your work, how you know when you have completed a task or assignment with excellence - is an example of metacognitive modeling (Tanner, 2012).

Ensure that you always uphold high standards as an Academic Coach so that your tutees will receive maximum benefit through your consistent, collaborative efforts. In doing so, you will contribute to developing the next generation of world-class think-tanks and strong students!



# WELCOME

to our online tutoring community



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