

TRANSFORMING GOOD STUDENTS INTO GREAT LEARNERS ONLINE SESSION 3 SCRIPT

Welcome back. This is the third and final session of the Transforming Good Students into Great Learners video series, presented by the Verde Learning Center at Yavapai College. Thanks for hanging in there and learning what it takes to become the successful student that you expected to be when you first decided to attend college. So far we've covered some important concepts about the differences between good students and great learners, the reasons good students do bad in college, and we learned how to apply some of the principles that have been presented to textbook reading assignments. In this final session, we'll be practicing some of the higher order thinking skills of applying, analyzing, and evaluating, as we learn how to use metacognitive techniques to accomplish a variety of learning tasks. Before you begin, you may want to pause the video and go to the Learning Center web site to print off the handouts for this session.

Albert Einstein once said, "The significant problems we face today cannot be solved at the same level of thinking we were at when we created them." The same could be said of capable students who are struggling to meet their own expectations for performance in difficult college classes. These students cannot solve their academic problems with the same level of thinking that created them. Their problems are most likely caused by their tendency to operate on surface levels of learning, whereas rigorous courses require deeper levels of thinking. When most students realize they're having a problem getting the grades they believe they deserve based on the amount of studying they've done, they will change their strategy or the amount of time they spend studying. But they'll still be thinking about the material in the same way. What we've been talking about over the past two sessions is how we can CONTROL how we interact with material in order to reach different learning outcomes.

We've learned about two kinds of students. Good students are those who are not in tune with the types of outcomes they should be working towards in their classes, so although they work hard, they are not achieving the depth of learning their professors expect. Because these students aren't aware of the outcomes they should be reaching while studying, they will never know if they've studied the right thing or if they've studied enough. They go into the test with high expectations because they've worked hard, but not really sure if they're ready to perform at the level needed to earn the grade they believe they deserve. Great learners, on the other hand, are more aware of their expected outcomes, and are therefore better able to better focus their study sessions to make sure that they achieve them. These students think about the material while studying in the same way as they will need to respond to test questions. So they go into the test feeling confident that they are well prepared and will be able to perform at the level expected by the professor. Easy college courses may test you on simple knowledge; and most students taking memory tests do fine. But this doesn't work for rigorous college courses. This doesn't mean that simply remembering & understanding is bad, because there is still plenty of information that must be learned at that level. And certain concepts and ideas must be remembered and understood before they can be used to perform deeper level thinking skills. And everything doesn't have to be analyzed and evaluated. But students who are able to do these things will generally do better in college than those who don't. More difficult college courses don't test you on what you know, but on what you can do with what you know. This leads to deeper learning and longer retention.

We might think of the differences between good students and great learners as being similar to the differences between a novice and an expert. There have probably been many times in your life when you've decided to learn a new skill, such as playing a musical instrument, driving a car, playing a sport, cooking, learning another language, or growing a garden. When you first start out learning your new skill, you're a little nervous, perhaps a little awkward, or at least not all that confident. Maybe you get frustrated when you make mistakes. As you gain more practice and experience, you learn from your mistakes, your confidence grows, and you gradually become more competent at the skill. You continue to learn more and gain more experience until you become more proficient, and eventually, if you stick with it, you become an expert. Like this: <VIDEO PLAYS> In many ways, the differences between a good student and a great learner are much like the differences between a novice and an expert. As you make the transition from high school learning to college learning, you'll make a few mistakes along the way, but if you stick with it, you will eventually master the skills needed to excel in your courses. You can also apply this idea of developing from a novice to an expert when it comes to each subject that you'll be studying. You'll start out each course as a novice in terms of understanding the subject matter, and as the semester moves along you will progress through the stages of advanced beginner, competency, and proficiency. You can't expect to become an expert in a subject after just one semester, but you'll be on your way! Just remember that your professors are experts in their subject area, and they have taken a lot of courses and have gained broad experience in their field. So don't get frustrated when you can't do things as easily as they do!

In a nutshell, these are some of the most important things that we have covered so far. First, different outcomes can be produced with the same content; different outcomes have different values associated with them. Deeper level outcomes are more valuable than surface level outcomes. Next, the metacognitive learning goal is key to changing the learning outcome. We want to make sure that the outcomes we're achieving while studying align with what the professor expects. Finally, we then learned how to apply these principles and the ThinkWell-LearnWell™ Diagram to textbook comprehension.

We've already looked at a couple examples of how you can utilize the ThinkWell-LearnWell™ Diagram to help you establish metacognitive learning goals at each of the different thinking levels. The idea is to establish goals that will lead you through the deeper levels of learning so that you will be able to do something with the information at the end of

studying that you couldn't do before you started. Metacognitive learning goals can be in the form of a question or a statement that you wish to fulfill while studying. Let's use an example from a literature class that's studying poetry from a specific period. At the remembering level, you might have a learning goal or task definition of identify or name the authors and the poems they wrote. This is a fairly simple task requiring memorization and recall. At the understanding level, your task definition or learning goal might be to explain the major themes present in this collection of poems. At the applying level, your task might be to apply your understanding of the elements of poetry to interpreting a new or unfamiliar poem. Going deeper, your next goal might be at the analyzing level, to compare and contrast two different poets' approaches to creating imagery in this genre of poems. At the evaluating level, your task might be to determine which poem within a group is the best example of the defining characteristics of the genre. And finally, at the creating level, your learning goal might be to propose a new way of defining the boundaries of the period to better reflect a wider cultural context. Suppose that while you're studying, you perform the tasks at the surface levels of thinking, and have a pretty good grasp on what the major themes are that are reflected in the group of poems that you're studying. You then go to take your exam on this lesson, and your teacher asks you to tell which poem best represents the characteristics of the genre, oh, and by the way, be sure to support your selection with evidence from at least 3 other poems that have been studied. This task requires both analyzing and evaluating. Since you didn't think about the poems from this point of view while you were studying, you'll be hard pressed to compose a coherent essay in the short amount of time available to complete the test. However if you had considered this question in advance, and written up an outline of your arguments while preparing for the test, it's now just a matter of spending a few moments organizing your thoughts, and you're off!

We've been talking about six different levels of thinking, and I'd like to take a moment to talk about how these levels of thinking and learning represent different forms of knowledge. It has been suggested that there are really 3 types of knowledge that people learn. Declarative knowledge is factual information that forms the foundation for more advanced knowledge. Declarative knowledge can be declared....spoken or written. For example, knowing the formula for calculating momentum in physics is declarative knowledge. Which levels of thinking relate to this kind of knowledge? If you said remembering and understanding, you're absolutely correct. Procedural knowledge refers to how to do something. This is what we do when we're *applying* what we've learned to, for example, performing the steps in a process such as calculating the mass & rate of speed of an object. Conditional knowledge is what begins to emerge at the deeper levels of thinking of analyzing, evaluating and creating. For example, it's the ability to recognize that an exam word problem requires the calculation of momentum as part of its solution. Declarative knowledge is where novices start out, and conditional knowledge is what experts have. Experts can effortlessly draw on their declarative and procedural knowledge to address deeper problems, and think about things in new ways. They are able to utilize breadth of knowledge not just from their area of expertise, but from other areas they're familiar with as well. As you study in each of your classes, your goal is to work towards achieving conditionalized knowledge. Knowledge cannot be reduced to sets of isolated facts or propositions, but knowledge that is conditionalized provides you with not only a big picture perspective of the subject your studying, but also how it fits in with other concepts that you're studying in other subjects.

Understanding about these three types of knowledge applies to both course content as well as learning strategies. For example, we mentioned in the last session that there are different approaches to reading that we use every day. Efferent reading is the style of reading needed to extract important information from your textbooks. However, not all reading assignments are alike. A chapter in a history textbook with factual information differs from a primary historical document, which is different from an article interpreting or analyzing that document. So based on this example, we first realize that not all reading assignments are alike. That's declarative knowledge. The procedural knowledge is knowing about some alternate methods for note taking, so that you can get the information you need from the particular type of reading assignment you're doing. Some of the different styles of note taking are outlining, using notecards, the Cornell note taking method, drawing tables and charts, and using concept maps. If you'd like to learn more about any of these methods, just google the terms or visit the Learning Center. Being familiar with using different note taking techniques is procedural knowledge. Knowing when to apply a particular approach on any given reading assignment is conditional knowledge. Which method is best for the type of material you're learning at any given time? This requires you to analyze and evaluate the methods and make a judgment about what's going to work. These ideas are things to be aware of and think about when you study..... This is metacognitive awareness! Being more metacognitively aware leads to greater success in college.

We're going to spend the rest of this session talking about how you can apply metacognitive learning techniques throughout the study learning cycle. You'll remember this study/learning cycle from the first session. When we think of this cycle in terms of metacognitive processes, there are really 3 distinct categories where metacognitive skills relate to it that you can develop. Predicting and Planning, Monitoring and Adapting, and Evaluating. You might think of these phases as time you spend before you begin to actually study, time you spend learning during the cognitive activity portion of the cycle and the time you spend after you've finished learning new things but before you end your study session.

Let's start with Predicting and Planning. Take a moment to quickly skim through this quote. <PAUSE> This comes from a study where a group of students in a statistics class were split in half. Half of the class was told, then shown how to set goals and plan and monitor their learning, in a 30 minute 1 on1 tutoring session on metacognitive techniques. The other half of the class, the control group, received no such training. Then the students were taught how to solve a particular

type of statistics problem, and then asked to solve a similar problem on their own, while “thinking out loud”. The researchers recorded their talk-aloud thought processes and analyzed them. Which group do you think this student was from? If you answered the control group, you’re correct. This student did not receive any coaching on using metacognitive techniques. The students who did receive the instruction were found to have spent more time planning their work, staying on task, monitoring their progress, and completing the problem with the correct answer. What we’re talking about here is goal oriented thinking, which can also be referred to as self-regulated learning or metacognitive awareness. It has to do with knowing how to establish a goal and plan out a study session, so that you’ll know what direction your thinking should take you. Planning for learning is hard for new college students because they’ve generally had someone else to do all the planning for them in their pre-college learning experiences. Now they must learn how to plan for themselves. And this is an important skill to develop because of that 80/20-20/80 rule we talked about before.

We just saw looked at an example of poor planning. This student’s approach lacked focus. He was randomly trying various approaches hoping that one might work. He just did whatever popped into his head and tried to apply it to the problem without really thinking about whether it was appropriate in this situation or not. A good planner, on the other hand, spends a few moments before jumping in to reason out what must be done, and set a goal or goals for the study session. She creates a plan, and selects an appropriate strategy, then organizes her time and resources in order to accomplish the goal she established for the session.

As we learned in the first session, metacognitive activity is about asking questions about your cognitive activity. You might remember seeing this diagram of the relationship between cognitive and metacognitive activities. During the predicting and planning phase of studying, you’ll want to ask yourself questions such as what do I need to learn, what do I already know about that, where do I start, how much time will I spend, what method or approach will I use, and most importantly, what do I need to be able to do at the end of this study session that I couldn’t do before I started? Thinking about these questions for a few moments prior to jumping into your study session will help you keep focused, and end up with a better result from the time you spend. Being clear about what you want to gain from assignments and study sessions, and establishing appropriate learning goals is key to your metacognitive development.

Here are a couple of techniques that you might find useful at the predicting and planning phase. A KWL Chart is a piece of paper divided into 3 columns. During the predicting & planning phase, you might create a KWL chart for each important topic that you will be covering in your study session. Begin by filling out topic & the first 2 columns, writing down what you already know about the topic, and then what you want to know or be able to do with what you know. Thinking about what you already know will help you get a handle on what you’re bringing to the table, and help you realize that you’re not starting from scratch. You already have some useful knowledge that will help you approach this new task. This middle column represents your metacognitive learning goals for this topic. Then as you study, you can fill in the 3rd column. KWL charts make great study tools for test review, and help to keep you on track during your study sessions. KWL charts are one type of study guide, but there are several other ways of creating study guides. The purpose of a study guide is to organize content so that you can increase your comprehension of large amounts of information. There are many types of study guides, and the format you choose will be determined by the type of information you’re trying to learn. Some different types of study guides are mind maps, or sometimes these are called concept maps, where you start with the main topic in the middle, and branch off from that in different directions with subtopics, organizing the information as you go, and visualizing the relationships among details. Comparison charts allow you to organize information visually to see relationships among characteristics, and is a good tool to use when you need to be able to analyze similarities & differences. Concept cards, which are sort of like flash cards on steroids, go beyond simple memorization that is typical of flash cards you’ve used by including information at the deeper levels of thinking. A diagram or flow chart can visually represent dynamic information, or a time line might be useful for certain types of subject matter that can be organized chronologically. There are many different approaches to creating study guides. The metacognitive piece is putting the thought into it up front and being deliberate about choosing a method that best suits the material you’re learning. And remember, the study guide that you create while learning will really come in handy when it comes time for test review.

Once you’ve completed the predicting and planning phase of your study session, it’s time to get down to business. While in the actual intense study portion of your session, it’s important to stay in tune with what’s going on by monitoring what you’re doing, and adapting when what you’re doing isn’t working well. Students who don’t monitor and adapt their approach will continue using familiar strategies that may not work for the material they’re trying to learn. These students will adapt at the planning phase by increasing the amount of time they study, rather than considering their learning outcome and redefining their study task. Great learners, on the other hand will notice when what they’re doing isn’t working, and adapt their strategies, utilizing varied approaches depending on the topic being studied. This includes

adapting their metacognitive learning goals to achieve the outcomes expected by the professor. Students who are good at monitoring will constantly verify their understanding while they're studying to make sure that they're achieving the outcomes that will be needed to do well in the class.

Here are some examples of questions that students who are good at monitoring and adapting will ask themselves while studying. It's probably a good idea to pause every 10 minutes or so, or at the end of each major section that you're studying, and ask if you're on the right track or need to go in a different or deeper direction. Do you need to slow down to better grasp the ideas, or can you speed up over an easier or less important section? Do you need to break the content down into smaller chunks? Are you maintaining your level of concentration, or is your mind wandering? If it is, what do you need to do to get back on track?

One of the best ways to maintain your focus while studying is by using active learning strategies. Just sitting and reading your textbook is a pretty passive study task, but if you can incorporate any of these methods you will find it much easier to stay engaged throughout your study session, and you will also find that you will learn and retain the information better. Which of these methods are you already using? <PAUSE> It's important to realize that not every method works in every situation, and so this goes back to the concept of procedural and conditional knowledge mentioned earlier. The more different procedural approaches you feel comfortable using, the easier you'll be able to select an appropriate one for the task at hand. If you only have a couple of methods in your study repertoire, you may not be as well equipped to adapt to different study tasks. So try out some of these varied methods next time you sit down to study, and see how it works for you. Keep expanding your repertoire.

When you monitor yourself while studying, you may discover that you've fallen into one of these common pitfalls that many students experience while engaging in cognitive thought processes. Missing important data means that you don't have all the information that you need to complete the task or reach the desired outcome, such as trying to solve a math problem without identifying all of the variables first, or analyzing a poem without reading all the stanzas. When you select the wrong skill to apply, you might proofread to see if your paper sounds right, rather than checking for common errors such as sentence fragments, subject-verb agreement, punctuation, and other errors that you tend to make. Or you may neglect to make sure that you've satisfied all the criteria for the assignment and organized your paper in the most effective way. Students who fail to divide a task into subparts might jump right to the final calculation to get the answer, before they work through each of the steps in a math problem. Or they might sit down and just start writing a paper without first establishing their thesis statement and organizing the main points they wish to include. We've already talked about choosing the wrong task definition, but another example of this might be when a student in a speech communication class will write a summary of what was said, instead of doing the assigned task of analyzing and classifying group communication strategies used in their group discussions. An example of not understanding the criteria to apply to an assignment might be, when asked to evaluate the evidence provided for the major claim of an article, a student will explain why she liked the article rather than apply appropriate evaluative criteria. Some tasks are complex, and if you haven't mastered all of the sub-skills you may run into trouble. For example, some students might have not yet learned how to carry out all the steps in a complex nursing procedure. Or a student may know the sub-skills, but they're not proficient enough to perform them without thinking about it too much. Think back to the video clip from earlier in this session. The more conditionalized the individual's skills became, the better piano player or nurse they were. For example, a student in an argument and persuasion class might have to check their notes on how to analyze persuasive strategies because they have not internalized the procedure. Finally, you may need to evaluate whether you're proficient at the type of thinking needed for the task. That doesn't mean that you might not be smart enough, it simply means that you may not be as good at abstract thinking; you tend to think about things more concretely. Or maybe you're uncomfortable with ambiguity, and you have trouble learning concepts that aren't black and white. Expanding your mental abilities is a big part of completing your general education curriculum that is part of your degree plan.

A good way to discover what kind of errors you're making in your thinking processes is to unpack their thinking, or tell someone step by step, how you are going about the task. By talking through how you're doing the cognitive task, you or someone else might detect where you're going wrong. Describing your thinking processes also develops metacognitive abilities—a very necessary skill to improve thinking. This is why working with a classmate, study group, or a tutor can be such a valuable experience; it provides you with a sounding board for verifying your learning.

Here are some techniques you might find useful for monitoring yourself. At the end of each study session or class lecture, ask yourself, "What was the muddiest point, or the one thing that I'm still most confused about?" Then, immediately go back and try to clear up your confusion. Does your mind tend to wander when you're studying? You're not alone. But paying attention to, or monitoring your attention, will help you stay on track. When you notice your concentration starts to slip, make a check mark on the top of your page, and remind yourself of what you should be doing. Keep this up for a while. If you're making a lot of check marks, it's time to take a study break. Come back after a few minutes with your task

clearly in mind and try again. If you'd like to get a better sense of your own metacognitive awareness, fill out a Metacognitive Awareness Inventory, or MAI. Download one from the Learning Center web site, and find out where your weaknesses are so that you can try to close the gaps and make each of your study sessions as productive as it can be.

The final phase of the study learning cycle is reaching the learning outcome. As you've learned, many students arrive at this phase not really sure about what they're learned, if they've studied enough, or if they've studied the right thing, so they're not well equipped to evaluate their learning. Students who are poor at evaluating hope they've studied what they need to and that they've selected the right strategies to get the job done. They move on to the next task without clearing up points of confusion. And rather than taking responsibility for their own poor performance, they blame the professor for giving a stupid test, their children for interrupting them all the time when they study, their classmates who gave them a bum steer on what the test would cover, or, well, you get the picture. Great students are good at evaluating their learning. They confirm their learning with a sense of I-got-it-ness. They make sure that they haven't left any points of confusion hanging out there, and they thoroughly evaluate if their learning outcomes match their learning goals and the class expectations. Great students take full responsibility for their shortcomings and take what they've learned in one disappointing situation to improve the next time.

Poor metacognition is a big part of incompetence.....people who are incompetent typically do not realize how incompetent they are. People who aren't funny at all think they are hilarious. People who are bad drivers think they are especially good. You don't want to fly on a plane with a pilot who has poor metacognition. Being good at metacognition and evaluating learning is an acquired skill. If you've ever watched American Idol or another reality show where people demonstrate their talent, you've seen examples of this. Some of those who audition are surprised when the judges tell them how bad they are. This is because they have not done a good job of assessing their own ability. It also means that some students have a mistaken sense of confidence in the depth of their learning.

This chart will explain what I'm talking about. This comes from a study by Dr. Stephen Chew, a psychology professor at Samford University. He gave his students a test, then asked them to write down what score they thought they achieved on it. Then he graded the exams and plotted out the results. If the students predicted score was close to their actual score, their dot fell close to the line. If their actual score was higher than what they thought they got, the dot falls above the line. If their predicted score was higher than what they actually got, in other words, they did worse than expected, their dot falls below the line. The farther off their prediction, the farther from the line. You can see here that the majority of students in the study predicted a higher score than what they got. So even after taking the test, they thought they had learned the material better than they actually had. These students had poor metacognitive evaluation of their own learning. This phenomenon is not uncommon. Have you ever been surprised at your score after you took a test, and thought you had done pretty well? Dr. Chew created an excellent video series called How to Get the Most Out of Studying. If you have found the information in this Transforming Good Students Into Great Learners helpful, you may want to spend a few minutes viewing this 5-session series. They're short videos....you can watch all 5 videos in about a half an hour, and you'll find some more excellent tips for transforming yourself from a good student to a great learner.

One method you might find helpful for assessing your own learning is using the Learning Sufficiency Diagram. This tool is an extension of the ThinkWell-LearnWell™ Diagram. Its value is in helping to identify specific behaviors and understandings that occur as one moves from shallower levels of thinking to deeper levels of thinking. It provides some examples of learning products at each of the stages of thinking, as well as some methods for you to gauge and confirm your learning. Use it alongside your ThinkWell-LearnWell™ Diagram when you study, and at the end of each study session to assess your learning sufficiency. What do you do with your tests when you get them back? Do they go straight into the vertical file? A test can be an excellent learning tool, especially when your grade is less than you had hoped for or expected based in the amount of studying you did. One of the best ways to learn is from our mistakes. Take the time to look over your tests, determine where you went wrong, figure out how you might have prepared differently, and clear up those points of confusion before moving forward. Much of the content that you learn in your classes builds on prior learning, so you want to make sure you're filling in the gaps as you go. Don't be afraid to visit your professor during office hours to review the test and get some constructive feedback. All these things will help you to do better on the next exam. You might also use the Test Preparation Self Assessment. This little survey provides you with 20 methods that are tried and true effective techniques that can be used in preparing for tests. Which ones have you used? Which ones can you begin to incorporate into your active learning strategies?

Another aspect of metacognitively evaluating how well you're doing in the study process is to recognize red flags, or unproductive behaviors. When you see yourself falling into any of these bad habits, it's time to give yourself a little talking to and begin thinking about what needs to be done to get yourself back on track. These behaviors represent poor metacognitive awareness and lack of planning.

Much can be learned from experts in the field of education, and John Dewey was one such early expert. He said that we learn more from reflecting on our experiences than from the actual experiences themselves. And that's what metacognition is all about. It's focusing attention on and reflecting on what you're doing, why you're doing it, and how it could be done better.

As we draw this series to a conclusion, you may be wondering if the methods presented will really work for you. Some students who previously attended the Yavapai College workshops were surveyed after they had an opportunity to use metacognitive techniques for the duration of the semester, and here are some of the results. Students found these aspects most helpful, and many would recommend to others. The most significant changes in study behavior had to do mostly with defining study goals, thinking about concepts at deeper levels, and paying more attention to metacognitive activity. Many students also achieved other benefits. These charts shows where the rubber meets the road, and that's on grades. Students reported grades before taking the workshops, and after. You can see that there was some marked improvement in grades, in that the post-workshop grades reflect more higher grades and fewer lower grades.

This brings us to the conclusion of the 3-part series on Transforming Good Students into Great Learners. If you find yourself faltering from time to time, feel free to come back and view any of these videos again. Thank you for taking the time and having the motivation to want to improve your experience as a college student, and best of luck as you move forward towards your goals.