

How Can I Enhance Students' Self-Regulated Learning Skills?

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Linda Nilson:

Hello. My name is Linda Nilson, and I'm director of the Office of Teaching Effectiveness and Innovation at Clemson University in South Carolina. And today I'm going to talk about how you can enhance your students' self-regulated learning skills. This comes about as close to a magic bullet for student learning as you can get. And I'm so fond of this topic that I wrote a book about it, *Creating Self-Regulated Learners*, that came out in 2013.

Here's the promise, the outcomes for you, by the end of this short seminar. You're going to be able to define self-regulated learning. You're going to be able to wisely choose and set up activities and assignments that will build your students' self-regulated learning skills. And you'll be able to incorporate these activities and assignments in your course in appropriate places. And then finally, you're going to be able to assess the assignments ever so quickly, so it's not going to add to your grading burden.

So what is self-regulated learning? Very simply, the ability to plan, monitor, control, and evaluate one's learning in order to maximize it, so there's a real purpose for this. There are three stages to self-regulated learning, before, during, and after. The before stages, a student or learner is planning the task, goal-setting for the task, whatever the learning task or assessment task might be. So how are they going to go about it?

During the task, students are monitoring their progress, their learning, their focus, their motivation, their self-control, their environment, resources, everything that affects their learning. And then at the end of the task, they are evaluating their learning, the strategies they used to meet their goal, and also evaluating how well they met their goal.

The list in front of you shows the kinds of self-regulated learning activities and assignments we're going to be talking about in the next few minutes. You can see some for the start of the course and the end of the course and some for different components of the course. And some of these are called wrappers, as you can see. Wrappers around assignments are called, also called meta-assignments.

So let's look at some of these for the start of the course, and this is just a sampling of those. Reading and discussion on learning and thinking. Our students come to us, especially in their first year in college, without much knowledge of reading and, well, how to read, how to learn, how to think.

And so this will give them, reading an article on this sort of topic, which, by the way, it's in your handout, I recommend a couple to you, will really get students thinking in, of learning in a new way. And I recommend

Leamson's article in particular. I think it's a little bit more accessible than Wirth and Perkins.

Then there's the goal-setting essay, *How I Earned an A in This Course*, but again, at the beginning of the course. And this gets students thinking about what they really have to do to learn an A. This actually helps them set goals to learn an A. There's reflective writing on the nature of the subject matter where students can tap into their prior knowledge, and you can see what their misconceptions are when you read this. This is very important because you've got to weed those out first before you can teach students valid knowledge.

And then finally, there is the knowledge survey, really a student confidence survey. What you're giving students are a series of questions and tasks on your material in the course that you might get out of your syllabus or exercises or previous exams. But you're not asking students to do the tasks or answer the questions. You're asking them to tell you how confident they are in their ability to do the tasks or answer the questions. So it's a confidence survey. Hopefully, you also have different levels of thinking in there too, some lower level, some higher level.

So you're asking students whether they're very confident to not confident at all or whether they believe that they could do this at a very high level of performance or they don't have a clue as to what the question is even asking for.

The students know what they do and don't know, well, they usually overestimate what they know, overestimate their skills, when they know the least. But in the sciences, engineering, and more technical fields, they don't recognize the vocabulary, and so they are less likely to make this error than they are in other fields that borrow more everyday words and have specific definitions to them.

So let's get on to reading wrappers, and these wrappers also apply to videos or podcasts or however you are giving first exposure of the material to your students outside of class. Reflective study questions, and this is just a sampling of three that you can ask them. But you really should tailor these to the material.

The first type of study question has to do with just asking them what are the most important concepts and principles and having students write down what they don't understand clearly. Very important for them to identify what they don't know. This is, again, evaluating their learning.

Another type of reflective study question you can ask has to do with comparisons and connections students can make to what they already

know, to other courses, whatever is important in that particular reading or podcast or video.

And then you can ask students about their affective reactions to the material, their values, beliefs, emotions. And this is very good for the memory. Any kind of association of your course material with emotions is very favorable for the memory because it brings in, the emotions bring in new neurotransmitters.

Here's another thing you can have your students do. It's a self-testing procedure. It's called Read, Recall, Review. So you have students read the material and then put away their notes, put away the book, whatever, put away the podcast, and recall everything that they can, reciting it or getting or writing it down. And if you're having them do this as homework, they kind of have to write it down. Then you have them review for what they misunderstood or forgot.

There's actually quite a bit of research on this technique. It is as good for the memory and learning as note-taking, but it takes less time than note-taking and way better than just rereading a chapter again and again, which students will tend to do.

Then there are visual study tools. This is something that also works at the end of a lecture, for instance. And what this is all about is having students do a drawing or a diagram or a map of the material. This is known to improve reading comprehension because it gets students thinking on that conceptual level, and it fosters longer-term retention of the material and makes retrieval easier.

And here's how it works. Students have to actively integrate and structure the knowledge themselves. This is the only way that we remember material long term, when we get it organized. And we can organize it visually. It is easier for our mind to process visuals and to recall in visuals. It's less taxing on our working memory. But it also involves less, fewer cognitive transformations than text. Imagine the kind of brainwork it takes to take 5000 words of text and make sense out of it versus looking at a one-page diagram or map.

And then visuals will cue the mind as to the text to fill in and the details in the material. Visuals are just absolutely wonderful tools. And here are a few of the common ones that I'm sure you're all familiar with, the flowchart, the matrix, which is like a table, concept circle diagrams like Venn diagrams, the cycle, the mind map, the concept map for hierarchically organized material. I'm sure you're familiar with at least some of these. Which one you would have the material, the students use depends upon the material.

Now here's something you can use in lecture. It's called periodic free recall, another self-testing procedure. So students will listen to your mini-lecture, then you pause. They put their notebooks away and try to recall all the important points. Then they write them down and write down any questions. Then they work with their neighbor to fill in the blanks and to fine-tune their notes. This is a wonderful procedure, and it gets them to monitor their learning when they're listening to your lecture.

Here's another sort of thing that it does. This is called active listening checks. And what you do is you tell your students to listen for the key points. Then you pause and ask them to write down those three most important points and turn it in to you. You tell them what those most important points are, and then students self-assess their listening.

There was research done on this by Martha Lovett. She found for the first time and the third time, first, 45% of the students got all three points. By the third time, 75% of her students got all the points correct. And you can take that a little further if you want. But it teaches students active listening.

And then there are the minute papers. Any kind of question that you ask them at the end of your lecture or end of a mini-lecture that gets them to review the material and to assess that material for things like what's the most valuable thing they learned, what's the most surprising or unexpected idea, and this brings in emotions. What stands out in their minds? What helped or hindered their understanding? And there are probably a dozen other questions that you can ask your students, depending upon the material.

Okay. Let's get to meta-assignments or assignment wrappers. Now these are specifically for math-based problems. Get your students to start the problems at the end of your class by pairing them off and getting them to think aloud through the problem. In other words, they start working the problem just in terms of talking to their partner about how they'll approach it, and then, of course, the partner helps them out. And then they go to the second problem. So they're not really doing their homework, but they're getting ready to do their homework.

This way, you'll never have the problem of students coming up to you and saying, well, I understood everything we're saying in class, but I couldn't do the problems. This nips the problem in the bud because they start doing the problem. This way, you can help them if both students in the pair are stymied.

Another thing to do with respect to homework problems is to have students take the problems that they missed and to write an error analysis, why they missed them, and then to solve a similar problem. This way, they are learning from their errors.

Then there are papers and projects. Those are different kinds of assignments that you might have students doing reflective tasks like this along the way or afterwards. If you have them doing research or it's heavy on the writing process, you have them write down the steps, strategies, problems, how they overcame these problems, so they are reflective all along the way.

If they are solving a problem, perhaps debriefing a case or a problem-based learning problem, you have them describe their reasoning, how they defined the problem, came up with solutions, decided that one was the best. You might have them assess their skills, how they improved, what they gained, how that, those skills would be useful in the future right after the task. This is an evaluation.

You might have them actually evaluate their own work and their achievements in doing the paper or the project. You might have them paraphrase your feedback on their draft. And this is particularly useful with, if you're having the students do a revision because you might be surprised of the misunderstandings that develop.

You might want them to write down their goals for their revisions and strategies for revision before they do the revision. This is getting them to plan. You might have them write the, talk about the value of the assignment, what they learned, after they do the assignment. And this is something students will really do a great job on is writing advice on the assignment for next year's students, how they prepared for it, what strategies will get them farthest, what the value of the assignment might be. Students really listen to each other.

And then finally, let's look at experiential learning projects. Now these might be substantial assignments that you might want to grade on a rubric. So let's say like connecting course outcomes and content to, let's say, like a service learning experience, this is a classic reflection on service learning, but it's very important that students make those connections. So this is along with their write-up of the experience. They're also doing a connection to the course. Monitoring and describing their self-regulated learning behaviors during the experiential learning experience.

Another one would be explaining their goals, strategies, and decisions and responses to other players during the experience. This would be great for a lengthy simulation or a substantial role-play or, again, a self-evaluation of

their goal achievement and their performance in the course of this experiential learning chapter in the course.

Then finally, exam wrappers. This first one, they do a reflection on their graded exam where they actually look at how they feel about their expected grade and their actual grade. Is there a difference there? But then they assess how they prepared for the test. How many hours did they study? Was this enough? What were they doing while studying? Was this effective? Why did you lose points? Were there any patterns? And how are you going to do things differently the next time?

You can also have students do as they did, let's say, with homework problems to re-solve the incorrect problems or to do a similar problem and to write out the correct strategy. Or you could have them do a test autopsy, which is an error analysis for them. And you'll find this in your handout as well. It's called a post-test analysis where students will actually look at how many points they lost in, for certain categories, for certain sorts of errors. And, of course, you can add reflective questions in there as well.

These are regular or occasional activities that you can have them do. Learning journals on their self-regulated learning activities or a discussion board on it. So here, you're actually telling them about self-regulated learning activities and getting them to talk about them so they're always monitoring themselves. Or you can do knowledge surveys during the semester or during the term on each unit, before and after each unit, to find out what they think they know before and after each, the instruction.

End of course. This is great. Having your students write a letter to the next cohort. How to succeed in the course and what neat things they're going to be learning. Students really believe one another.

You can have them do a self-evaluation, how I earned an A in the course, or not. And so if you do this at the beginning, students have to look at what they knew would get them an A and then what they didn't do that got them a B or a C. But they have to face up to it.

You can have them repeat the reflective writing on the course material and to correct their answers from the start of the course. There are people who have made final exams out of this reflective assignment, very good final exams.

Or you can repeat the knowledge survey and have students compare their confidence in doing certain tasks at the beginning or at the end. This is also a way that students will learn about their overconfidence where they thought they could do something, and they found out they couldn't do it or they were doing it wrong.

On the issue of grading, again, you don't grade in-class activities. Any, well, the typical assignments that we've been talking about, you'd grade pass/fail. They get all points for doing something, either completely, answering all the questions, or writing, answering the questions and fulfilling the minimum length requirement that you give. And you might give full credit for a good-faith effort. But anything short of that, they get nothing for it. Okay. This puts them, gives them some investment in the assignment.

Again, only those major experiential assignments or a portfolio would you grade on a rubric, so most of these assignments will take you ever so little time, so you're essentially checking in the assignments.

Well, our time is up. This is a self-regulated learning book which you might be interested in getting for finding out more of these activities and assignments. Please do the survey. The URL is right there. We appreciate it very much. We want to hear from you.