

# Learning How to Learn: Teaching Study Skills in Introductory Economics

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# The Problem

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“I studied so hard. I can’t believe my score on the test”

“There’s no way I could have gotten such a low score”

“I was really confident that I had done well after taking the test”

“I knew the material, but I got test anxiety once the exam started”

“I knew the material, but I second-guessed myself.”

# The Problem

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Students don't know *what* studying is or *how* to do it.

Doing a few problems, reading the text

Students don't seem to know *how much* studying is too little or too much.

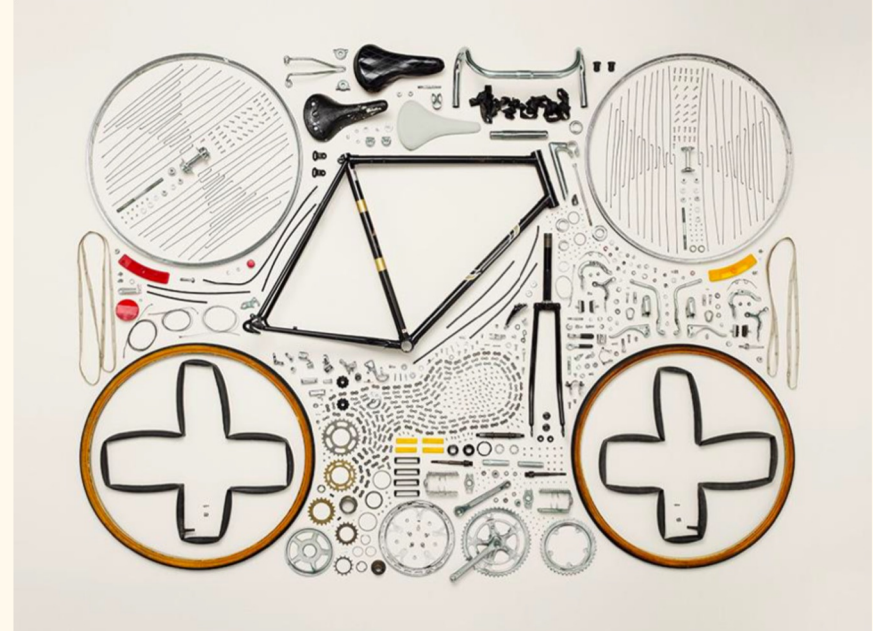
Measuring by some preset idea of how much to study, not by their lack of understanding or performance in class.

Students don't seem to have a way of testing what they know and what they don't know before taking a quiz or exam.

Starting too late, looking over an answer key



Stated learning outcome

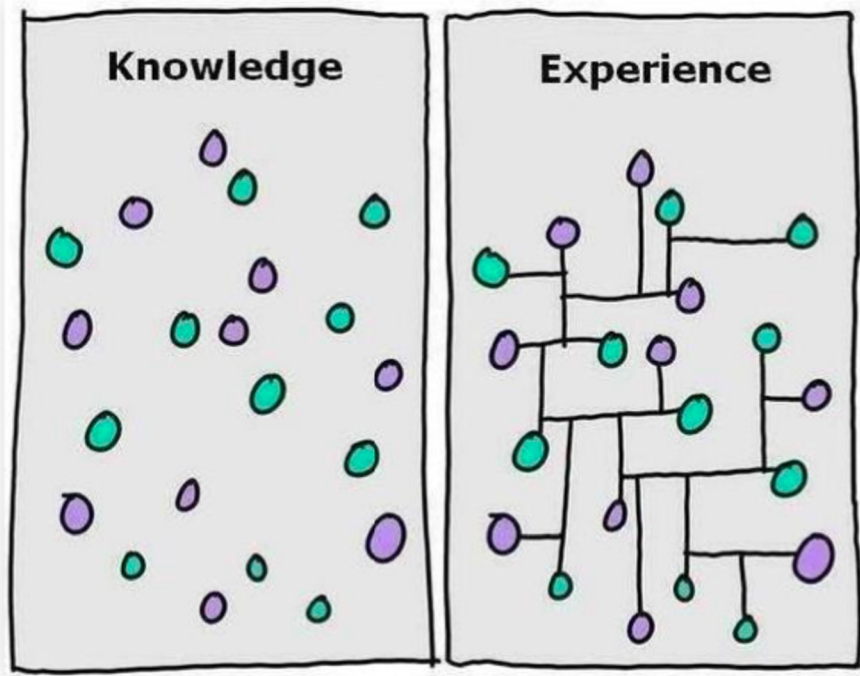


What we teach

# What our students learn



## II. During the Semester – make the connections for students



The expert's fluency conceals the very principles and strategies that the novice must learn in order to become more expert.

These are often invisible even to the expert because they are second nature.

And they're invisible to the novice observing the expert because they're implicit in the expert's work.

**The novice vs. expert brain**

*(How Learning Works, Ambrose et al)*

# The Research

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What study skills do students lack?

**Generic skills** – productive use of office hours, time-management

**Subject-related skills** – note-taking, math-related skills, how to use an answer key

**Metacognitive skills** - synthesis of notes, categorization of problems, tracking a concept across chapters

Allan and Clarke (2007)

# The Research

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Where should students learn these skills?

The “bolt-on” approach – academic or student success centers

vs

The “built-in” approach – study skills developed through the learning of the subject itself

Dunne et al (2000), Gamache (2002), Haggis and Pouget (2002), Wingate (2006)



# The Research

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The problem with the bolt-on approach:

- Study skills classes not taken by the students who need them the most (Durkin & Main 2002)
- Students do not recognize study skills as relevant to their subjects and fail to transfer them (Drummond et al 1998; Durkin & Main 2002)
- Study skills are divorced from subject content and knowledge (Nisbet & Shucksmith 1986; Gamache 2002)

# I. At the Start of the Semester – Frame accessibility as for everyone, not just those with documented disabilities

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## Syllabus statement:

Everyone has different needs for learning. If you do not have a documented disability but feel you would benefit from learning support for other reasons, and/or if you have substantial nonacademic obligations or other concerns that make learning difficult, I invite you to contact me.

Verbalize this in class!

# I. At the Start of the Semester – Begin teaching study skills

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Where and when?

**In the classroom** – Didn't work. It was a waste of time for students who didn't need it.

**During “office hours”** – working pretty well. We have tripled the number of students who come to each session.

# I. At the Start of the Semester – Don't Call Them “Office Hours”

We will work hard alongside you

	STUDY SESSION TIMES (1/10/2022-4/28/2022)					
	Let's do some economics together!					
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
<p>You can get help from <b>any of us</b> on <b>any of these days</b>!</p> <p>All times are <b>US Eastern Time</b>.</p> <p>Zoom link for <b>ONLINE</b> sessions only: <a href="https://gwu-edu.zoom.us/j/96239892102?pwd=S1Vmdk56cGo3NVNFMWtBOUZvd2pudz09">https://gwu-edu.zoom.us/j/96239892102?pwd=S1Vmdk56cGo3NVNFMWtBOUZvd2pudz09</a></p>				<p>9:30-10:30am Francisca (<b>ONLINE</b>)</p>		
			<p>1:30-3pm Prof. Foster (Room TBD)</p> <p>4-5pm Pedro (Room TBD)</p>	<p>2:30-3:30pm Nate (<b>ONLINE</b>)</p>	<p>1:30-3pm Prof. Foster (Room TBD)</p> <p>4-5pm Wanxin (<b>ONLINE</b>)</p>	
	<p>6-8pm Kathryn (<b>ONLINE</b>)</p>	<p>6-8pm Qingyu (<b>GELMAN 301</b>)</p>	<p>6-8pm Nate (<b>GELMAN 301</b>)</p>	<p>6-8pm Wanxin (<b>GELMAN 301</b>)</p>	<p>6-8pm Francisca (<b>GELMAN 301</b>) Pedro (<b>ONLINE</b>)</p>	

# I. At the Start of the Semester – Don't Make Them Look Like "Office Hours"

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Make "office hours" informal, fun, communal and **valuable**.

Talk about what you are doing in "office hours" in the classroom!

Teach students (*novices*) how you (*an expert*) would study for that week's quiz or a comprehensive exam.



## II. During the Semester – Who should teach study skills?

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- We should! during “office hours” – how would you study your own material to prepare for a quiz or exam?; tell them what you were like as a student; talk about how making mistakes helped you learn; talk about how learning involves struggle.
- A diverse set of peers (not the ones who got the easy A’s in your class); pick students who want to “pay it back”; they could be tutors or learning assistants.

## II. During the Semester – What study skills should we teach?

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### Just-in-Time Study Skills videos

*OK, You've Made it to Class. Now What? – Note-Taking Strategies for Economics*

*Time Management: Building a Schedule Using GW Coursicle.*

*Office Hours? What's That? And Should You Go?*

*Preparing for a Low-Stakes Economics Quiz*

*What to do After You Bomb Your First Econ Test.*

*Preparing for a Comprehensive Final Exam*

## II. During the Semester – Teach for Mastery and Recall

**Retrieval Practice** – forcing students to go back and retrieve knowledge learned earlier in the semester.

22 February 2022 > Economic Growth

Edit Delete

Q4

Worth 1 participation point and 0 correctness points



All Student Responses

187/226



Correct Responses

66/187 35%



Q4

Show Correct Answer

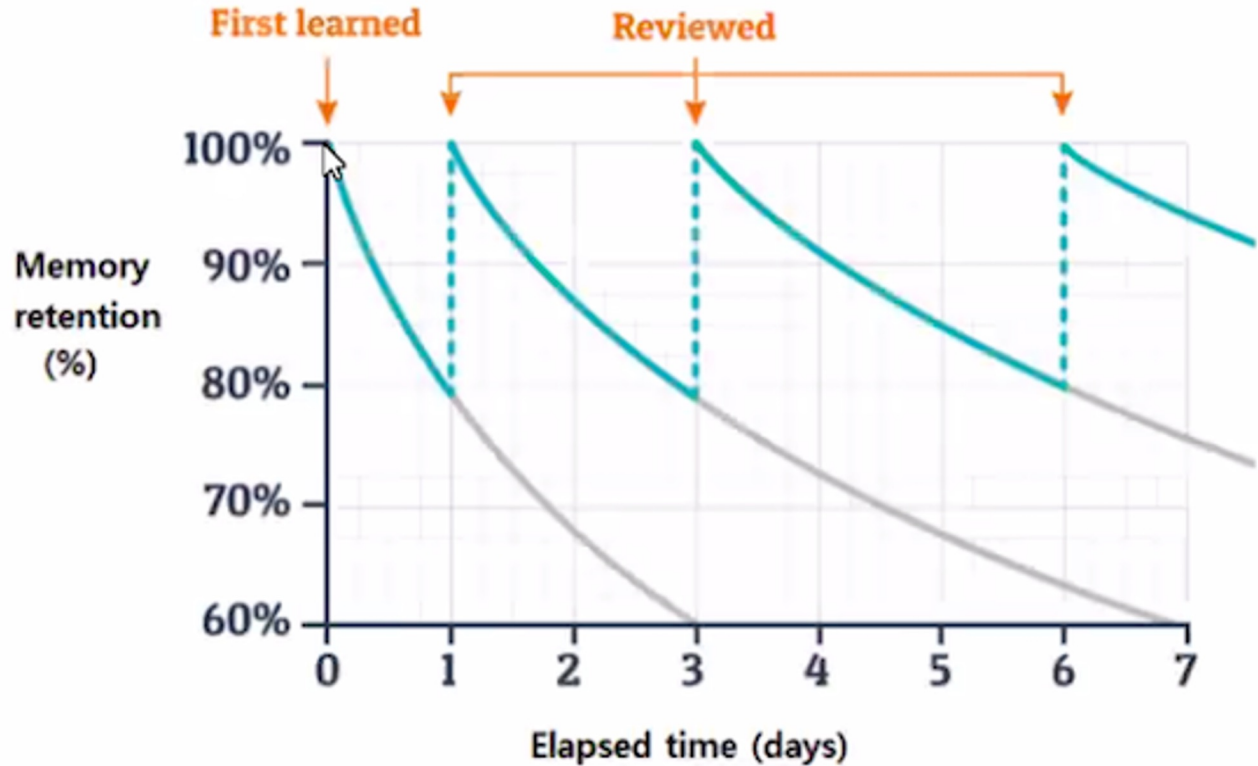
If GDP is increasing at an annual rate of 5 percent, population is growing at 1 percent, and we are experiencing deflation of 2 percent per year, what is happening to real GDP per capita?

A	Increasing by 2 percent.	<div><div></div></div>	47
B	Increasing by 3 percent.	<div><div></div></div>	21
C	Increasing by 4 percent.	<div><div></div></div>	50
D	Increasing by 5 percent.	<div><div></div></div>	3
E	Increasing by 6 percent.	<div><div></div></div>	66



## II. During the Semester – Teach for Mastery and Recall

**Spaced Practice**  
– spread out retrieval opportunities over time.



### III. At the End of the Semester – Teach for Mastery and Recall

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**Interleaving** – Study Guides (!) and Top Hat question jumble

**Problem Set 1:** AAAA BBBB CCCC DDDD

**Problem Set 2:** ABCD ABCD ABCD ABCD

**Problem Set 3:** ABCD BADC DCBA CDAB

### III. At the End of the Semester – Prepare Students for Exams

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“But I studied so hard for this test, I don’t understand how I could get a 52% on it!”

**Feedback-driven Metacognition** - helping students understand what they know and what they don’t know.

### III. At the End of the Semester – Prepare Students for Exams

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**Feedback-driven Metacognition** - helping students with strategies to understand what they know and what they don't know.

- What did I just read? Writing a chapter outline from memory.
- Preparing one-page exam guides for each chapter.
- Solving a problem without copying from an example (copying, not solving; doing, not learning)
- Types of problems and how they are different from each other (categorization).
- Not working backwards from answer keys.
- Leaving enough time to ask questions at office hours (signal when it is time to begin preparing for an exam)
- Comparing your work with the feedback provided on homework and tests.

### III. At the End of the Semester – Use course evaluations to improve your course

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*I wish you'd given me that advice before the midterm*

*..... and while I'm not a big quiz person the weekly quizzes did help me study for major assessments.*

*I really appreciated that some scores are dropped from each category, it really helped me to stay motivated even if I messed up once.*

*The strength of the course is the flexibility and ability to understand the material after repeated practice.*

*I am using the study skills I've learned in this course in other classes.*