

The Learning Blueprint Online Student Impact Summary



ABSTRACT || In the Spring of 2020 (during an extended COVID lockdown) a cohort of Year 11-13 ESF students completed an online, self-directed version of The Learning Blueprint metacognition program. ESF is the largest English-medium international school organization in Hong Kong.

The results were very positive. Students posted an average score of 80% on a 12-question learning concept quiz after completing the program (versus 46% beforehand). Students also demonstrated significant growth with regard to identifying key academic strategies and maintaining positive learning mindsets.

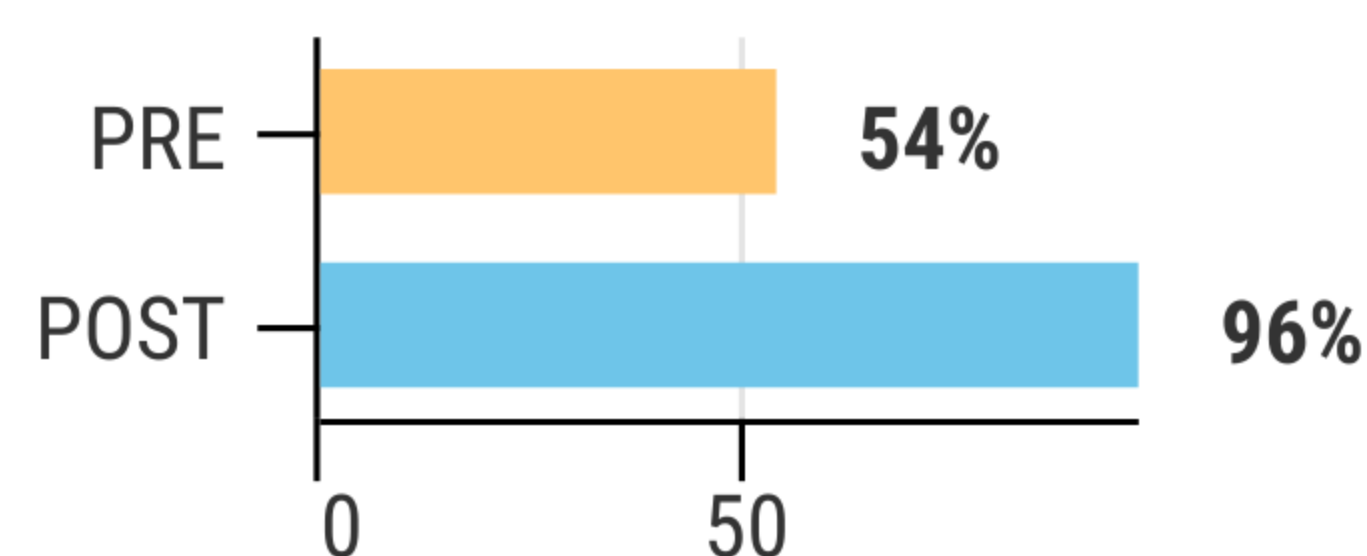
ABOUT THE PROGRAM || Multiple studies have shown that student awareness of the learning process is dreadfully low – especially among low SES students. Even at top schools, many students view learning as a ‘black-box’ process, leaving them with little-or-no plan for managing their own academic performance.

The Learning Blueprint cracks open this black-box and equips students with a research-backed cognitive framework they can utilize to take agency over their own thinking, learning, and self-management practices. Developed by science of learning expert Dr. Jared Cooney Horvath, this metacognition program has proven to be a uniquely powerful tool for deepening engagement and supporting academic success.

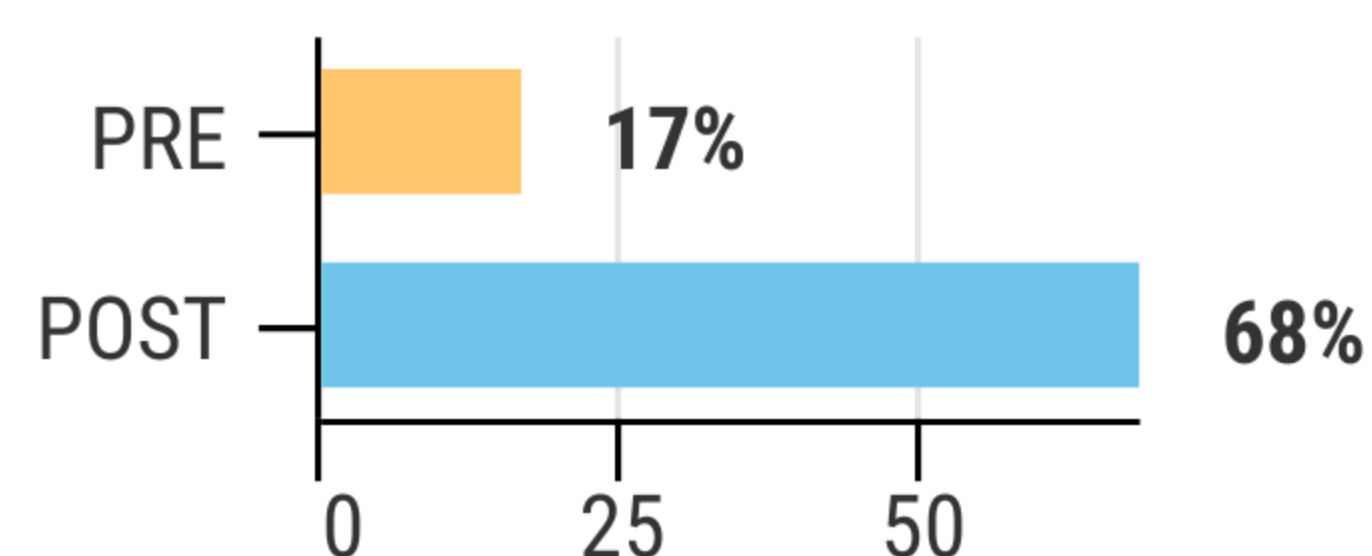


Collective Student Performance on Select Learning Concept Questions

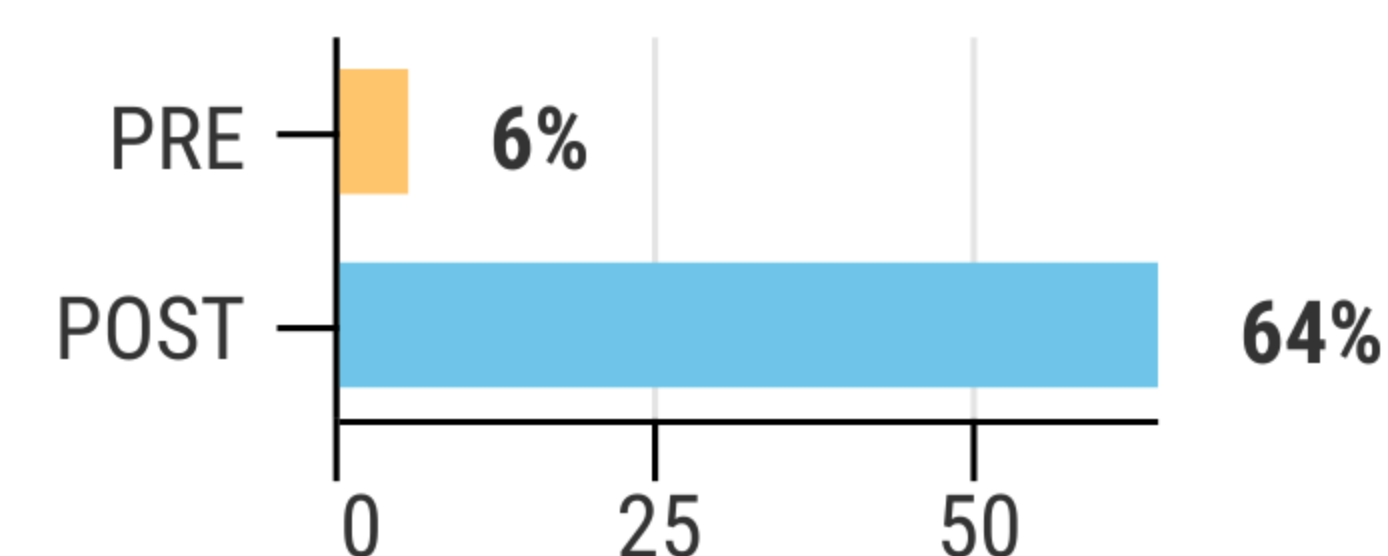
Which of the following supports deep, meaningful learning? (A: Error recognition)



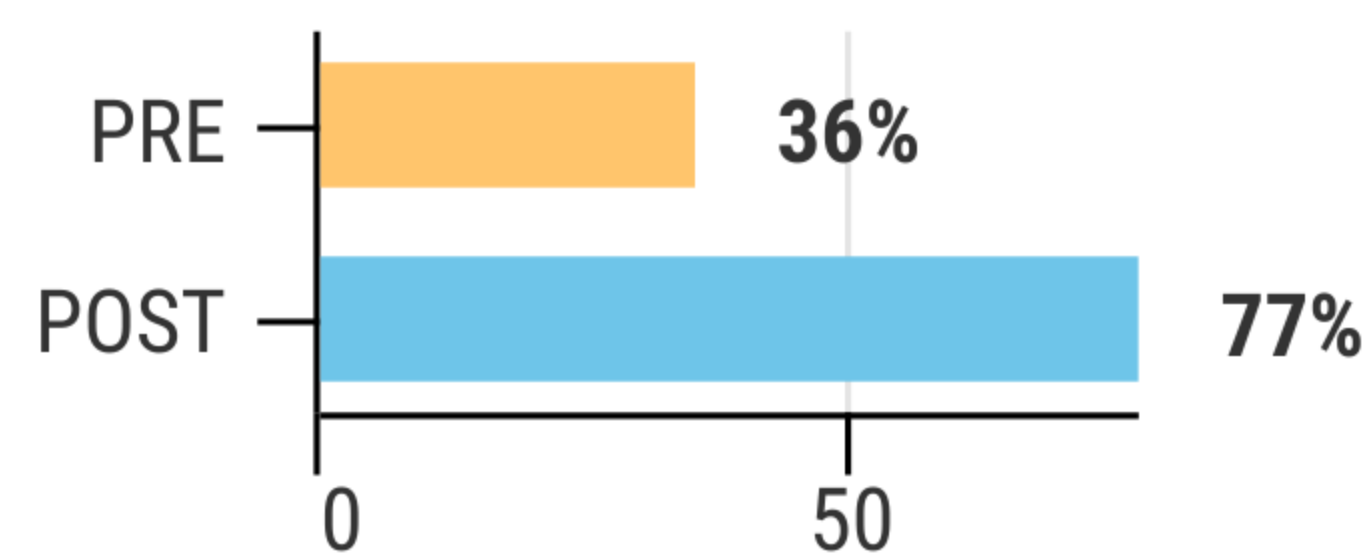
What makes mental visualization such a powerful phenomenon? (A: Neuroplasticity)



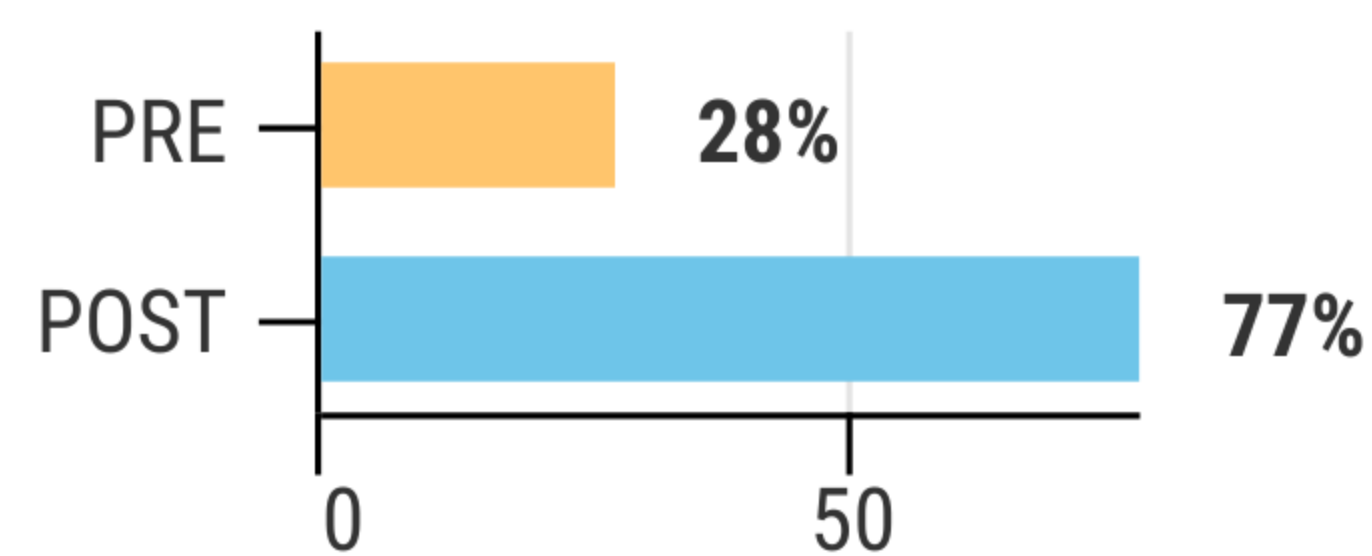
What always precedes skill development? (A: Fact acquisition)



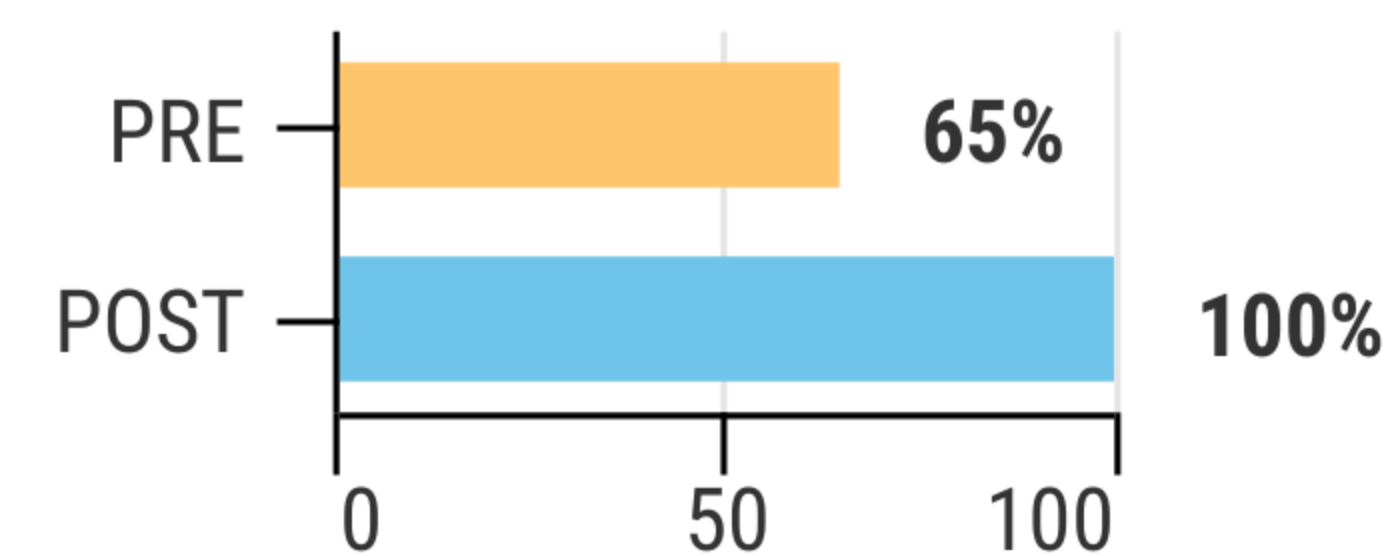
What are the three stages of memory? (A: Encoding, Storage and Access)



Which is a foundational principle of memory? (A: Recall is key for creating deep memories)



Which study activity would be best for creating deep memories? (A: Flashcards)



These graphs reflect the percentage of students who correctly answered each multiple choice question pre-and-post course completion.

See the following pages for a complete summary of The Learning Blueprint online student impact.

the **LEARNING BLUEPRINT**

Dr. Jared Cooney Horvath

THE LEARNING BLUEPRINT SUMMARY OF STUDENT RESULTS ESF SUMMER 2020

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THE LEARNING BLUEPRINT | DR. JARED COONEY HORVATH

The Learning Blueprint is a practical course in metacognition. Developed and taught by science-of-learning expert Dr. Jared Cooney Horvath, this interactive digital course is designed to help students take agency over their own thinking, learning, and self-management practices.

Research has consistently shown that student awareness of the learning process is dreadfully low. Even at top schools, many students view learning as a 'black-box' process -- leaving them with little-or-no plan for managing their own academic performance. The Learning Blueprint cracks open this black-box, and equips students with a proven cognitive framework upon which they can build a personalized approach to growth and self-development.

During this program, students are exposed to deep learning practices, the mechanics of memory, the patterns of attention, the imperative of errors and mistakes, powerful study and classroom-success strategies, proven self-management frameworks, and much more.

By teaching students the 'whys' and 'hows' that underpin learning -- and by helping them take ownership of the process -- The Learning Blueprint is a uniquely powerful tool for deepening student engagement and supporting academic success.

INSTRUCTOR BIO



DR. JARED COONEY HORVATH | PhD, MEd

Dr. Jared Cooney Horvath is an award-winning cognitive neuroscientist, best-selling author and renowned keynote speaker with an expertise in human learning, memory, and brain stimulation.

Dr. Horvath has published 4 books, over 30 research articles, and currently serves as an honorary researcher at the University of Melbourne and St. Vincent's Hospital in Melbourne.

His research has been featured in popular publications including The New York Times, WIRED, BBC, The Economist, PBS's Nova and ABC's Catalyst.

CONTACT: jared@lme.global.net | **BIO:** lme.global/bio-page

ESF SESSION OVERVIEW

During the spring/summer 2020, LME Global piloted The Learning Blueprint with a group of high school students from the English Schools Foundation (the largest English-medium international school organization in Hong Kong).

The pilot students were primarily Year 11-13's enrolled across three ESF schools (Discovery College, King George V and South Island School).

Due to the COVID pandemic, students were sequestered in their homes during this pilot run. Accordingly, they were asked to complete the course in a self-guided manner (i.e. students did not have a facilitator to help guide them through the course).

Of the 380 students who started the course, 90 students (23.7%) successfully completed the course, with an average completion time of 26 days.

While this completion rate is lower than we would have liked, we accept that this is the reality of self-guided, online courses. For instance, EdSurge reports the average completion rate for MOOCs (Massive Online Open Courses) to be between 5-15%.

If (under more accommodating circumstances) a designated teacher/facilitator from each ESF school had been available to help guide students through the course, we are confident this completion rate would have been significantly higher.

Case in point: in 2019 we worked with Independent Schools Victoria to deliver The Learning Blueprint to a digital cohort of >1,000 students. For this session, each participating school designated a 'local facilitator' to become acquainted with the content and lead students through the course. By involving a local facilitator, the completion rate exceeded 98%.

Note: In June, 24 students opted into a 4-week email sequence designed to offer some degree of external guidance by outlining/delivering a set of daily tasks that students would need to perform to complete the course in a timely manner. Of the 24 students who opted into the email sequence, 50.0% (12 students) successfully completed the course.

Measuring Student Performance

As part of The Learning Blueprint, students were asked to take a metacognition/knowledge assessment before and after completing the course. The result differential from these 'pre-and-post' assessments became the basis for gauging student performance.

The assessment consisted of the following sections:

- **MINDSET ANALYSIS** | Students were asked to rate their beliefs about 14 statements designed to measure their general mindset about thinking, learning and performing.
- **CONCEPT ANALYSIS** | Students were asked to answer 12 multiple-choice questions designed to measure their grasp of important thinking and learning concepts.
- **STRATEGY ANALYSIS** | Students were asked to respond to three opened-ended questions designed to gauge their awareness of relevant academic strategies.

This report includes a detailed analysis of the student results from each section.

PARTICIPATION DATA

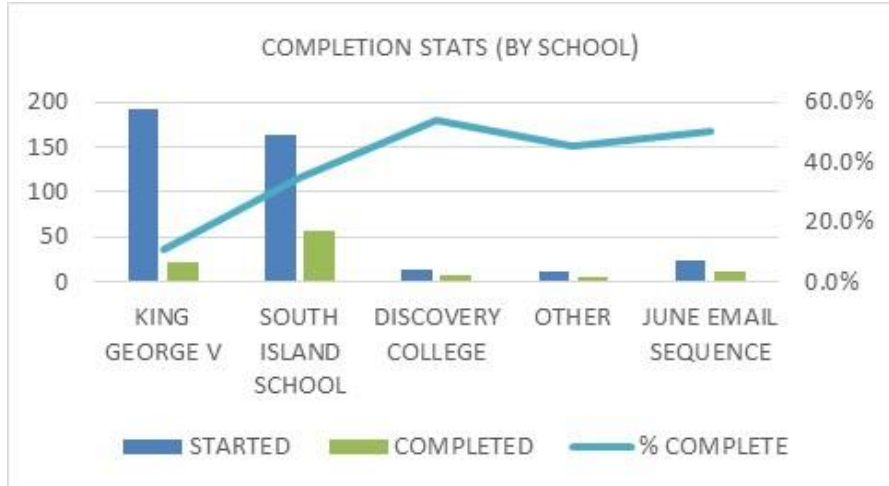
Completion Stats (By School)

COMPLETION STATS (BY SCHOOL)

	STARTED	COMPLETED	% COMPLETE
KING GEORGE V	192	21	10.9%
SOUTH ISLAND SCHOOL	164	57	34.8%
DISCOVERY COLLEGE	13	7	53.8%
OTHER	11	5	45.5%
TOTAL	380	90	23.7%
JUNE EMAIL SEQUENCE	24	12	50.0%

DATA NOTES

START = COMPLETION OF PRE-COURSE ASSESSMENT AND/OR QUIZ #1
 COMPLETE = COMPLETION OF POST-COURSE ASSESSMENT
 JUNE EMAIL SERIES INCLUDED STUDENTS ACROSS ALL SCHOOLS



Completion Stats (By Level)

COMPLETION STATS (BY LEVEL)

	STARTED	COMPLETED	% COMPLETE
YEAR 10	8	4	50.0%
YEAR 11	338	74	21.9%
YEAR 12	19	4	21.1%
YEAR 13	15	8	53.3%
TOTAL	380	90	23.7%

DATA NOTES

START = COMPLETION OF PRE-COURSE ASSESSMENT AND/OR QUIZ #1
 COMPLETE = COMPLETION OF POST-COURSE ASSESSMENT
 JUNE EMAIL SERIES INCLUDED STUDENTS ACROSS ALL SCHOOLS



Average Completion Time

AVERAGE DAYS TO COMPLETION:	26
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DATA NOTES

TOTAL SAMPLE: 78 STUDENTS
 EXCLUDES 9 STUDENTS WHO COMPLETED THE COURSE IN <1 DAY
 EXCLUDES 3 STUDENTS WHO COMPLETED THE POST-COURSE ASSESSMENT, BUT DID NOT COMPLETE THE PRE-COURSE ASSESSMENT

MINDSET ANALYSIS

As part of the course assessment, students were asked to rate their beliefs about 14 statements designed to measure their general mindset about thinking, learning and performing.

The ratings were based on a 7-point Likert scale (7=Strongly Agree; 1=Strongly Disagree). Agreement signaled a positive mindset about any given statement, while disagreement signaled the opposite.

Summary of Results

From the pre-assessment to the post-assessment, the average ratings rose across all 14 statements. The average pre-assessment rating was 5.1, while the average post-assessment ranking was 6.1 (representing a 19.2% increase).

See below for a statistical summary.

Data note: These statistics are based on the assessment data from 78 qualifying students. Of the 90 students who successfully completed the course, 3 failed to submit the pre-assessment (non-qualifying) and 9 submitted the pre-and-post assessment on the same day (non-qualifying).

Rating Statistics (Summary)

RATING STATS (BY AVERAGE STUDENT RATING)

	STATEMENT	PRE	POST	CHANGE	% CHNG
1.	My beliefs influence how I think and learn.	5.2	5.9	0.7	14%
2.	Making errors and mistakes can help me learn more effectively.	5.6	6.6	1.0	17%
3.	I am in charge of my brain (it adapts to my thoughts and behaviors).	4.9	6.2	1.3	25%
4.	How I respond to errors and mistakes is under my control.	5.3	6.0	0.8	15%
5.	I can improve any skill through deliberate practice.	6.0	6.3	0.4	6%
6.	Learning is a process that I can understand and master.	5.3	6.2	0.9	16%
7.	Memory is not random: It has a reliable set of rules I can leverage.	4.5	6.1	1.5	34%
8.	When I multitask, my learning and memory are impaired.	4.8	5.9	1.2	24%
9.	I have strategies for maximizing my learning during classroom lessons.	4.2	5.9	1.8	42%
10.	I have strategies for maximizing my learning when I study.	4.6	6.2	1.5	33%
11.	I am in control of my performance on exams.	4.8	5.8	1.0	20%
12.	Setting clearly defined goals is important for effective learning.	5.6	6.4	0.7	13%
13.	My well-being can be enhanced through simple and predictable practices.	4.9	5.9	1.0	21%
14.	I am accountable for my own learning and academic performance.	5.8	6.2	0.4	7%
TOTAL		71.6	85.7	14.1	20%
AVERAGE		5.1	6.1	1.0	20%

TOTAL SAMPLE: UNWEIGHTED BASE; n=78

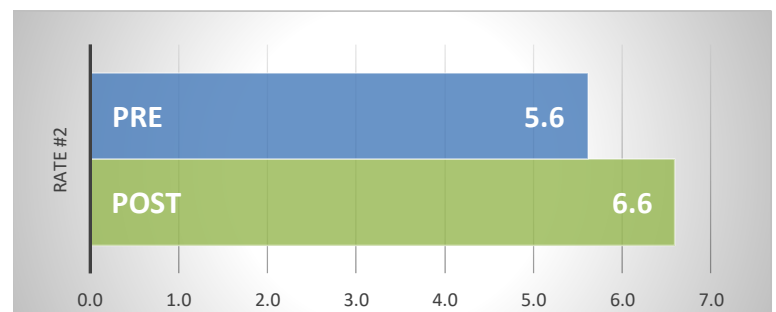
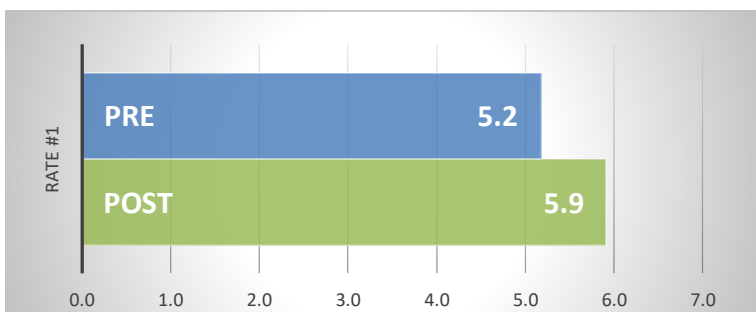
Rating Statistics (By Statement)

RATE #1 | My beliefs influence how I think and learn.

RATE #2 | Making errors and mistakes can help me learn more effectively.

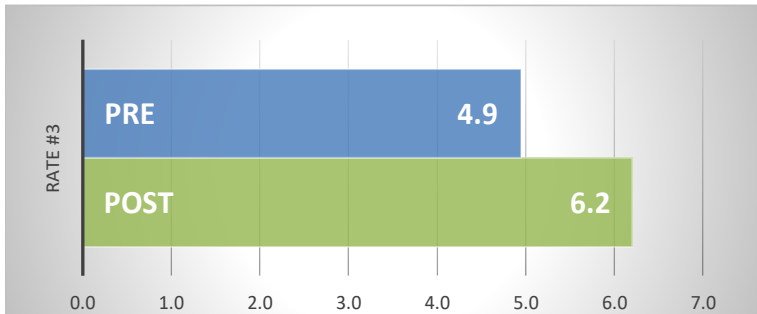
7-point Likert scale (7=Strongly Agree; 1=Strongly Disagree)

7-point Likert scale (7=Strongly Agree; 1=Strongly Disagree)



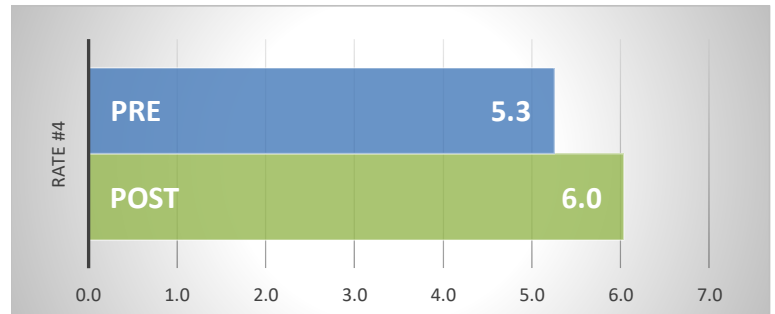
RATE #3 | I am in charge of my brain (it adapts to my thoughts and behaviors).

7-point Likert scale (7=Strongly Agree; 1=Strongly Disagree)



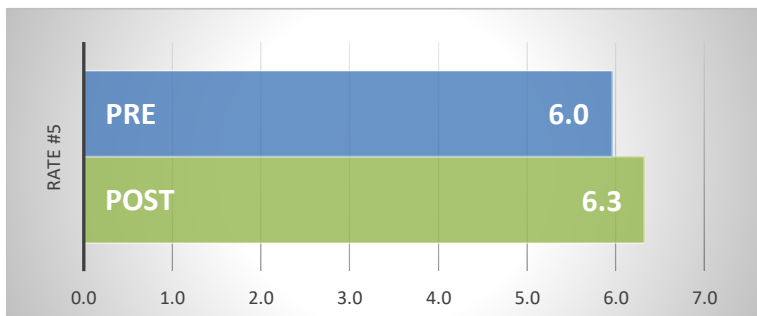
RATE #4 | How I respond to errors and mistakes is under my control.

7-point Likert scale (7=Strongly Agree; 1=Strongly Disagree)



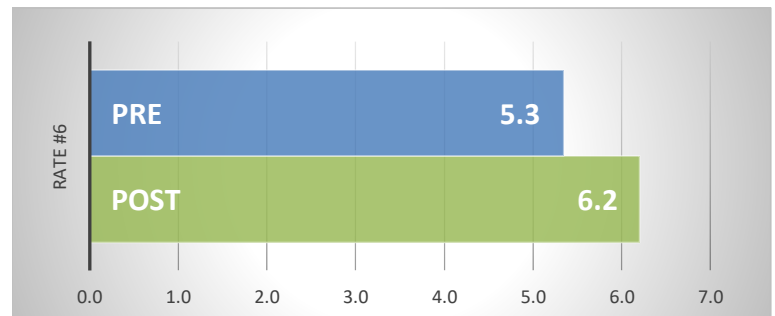
RATE #5 | I can improve any skill through deliberate practice.

7-point Likert scale (7=Strongly Agree; 1=Strongly Disagree)



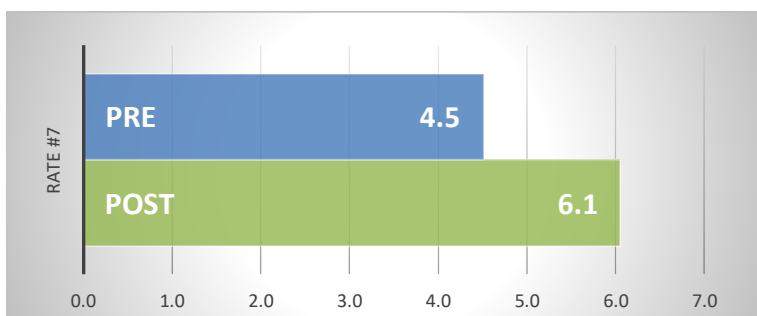
RATE #6 | Learning is a process that I can understand and master.

7-point Likert scale (7=Strongly Agree; 1=Strongly Disagree)



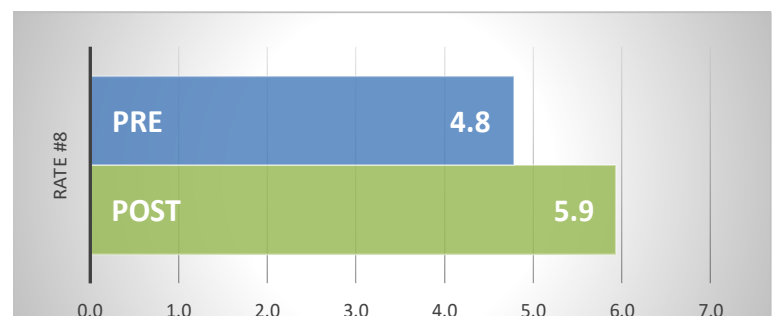
RATE #7 | Memory is not random: It has a reliable set of rules I can leverage.

7-point Likert scale (7=Strongly Agree; 1=Strongly Disagree)



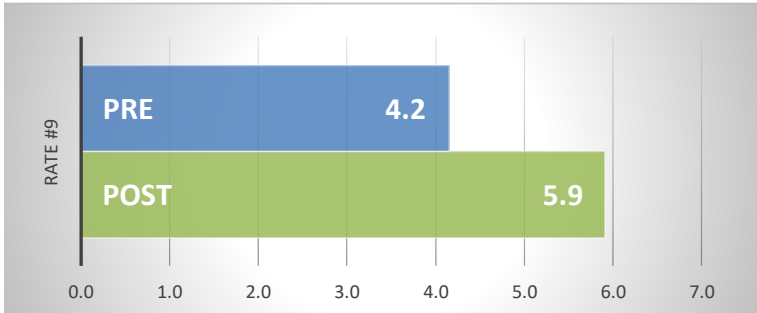
RATE #8 | When I multitask, my learning and memory are impaired.

7-point Likert scale (7=Strongly Agree; 1=Strongly Disagree)



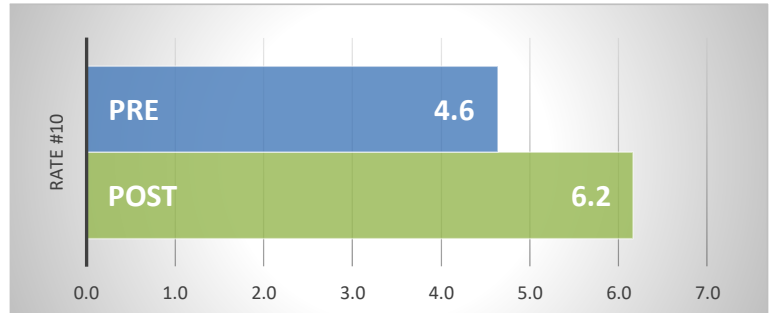
RATE #9 | I have strategies for maximizing my learning during classroom lessons.

7-point Likert scale (7=Strongly Agree; 1=Strongly Disagree)



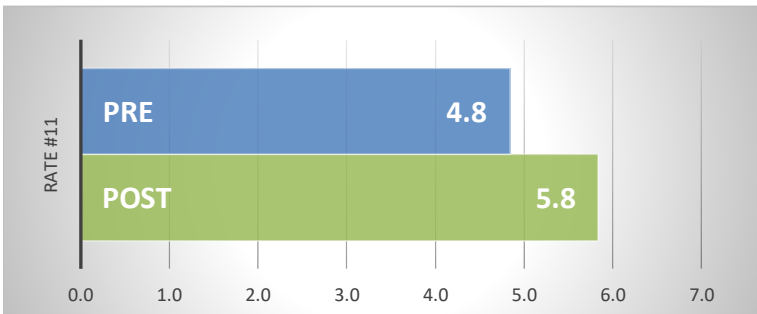
RATE #10 | I have strategies for maximizing my learning when I study.

7-point Likert scale (7=Strongly Agree; 1=Strongly Disagree)



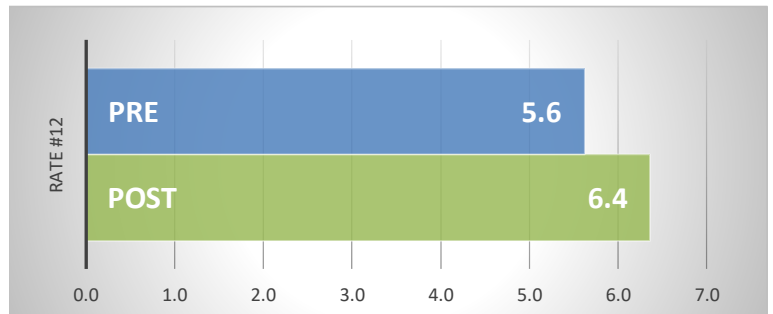
RATE #11 | I am in control of my performance on exams.

7-point Likert scale (7=Strongly Agree; 1=Strongly Disagree)



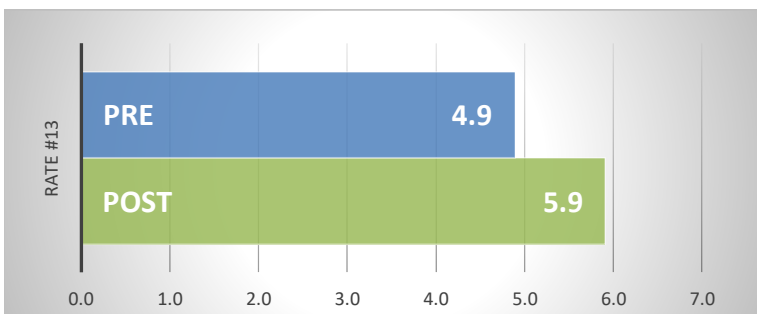
RATE #12 | Setting clearly defined goals is important for effective learning.

7-point Likert scale (7=Strongly Agree; 1=Strongly Disagree)



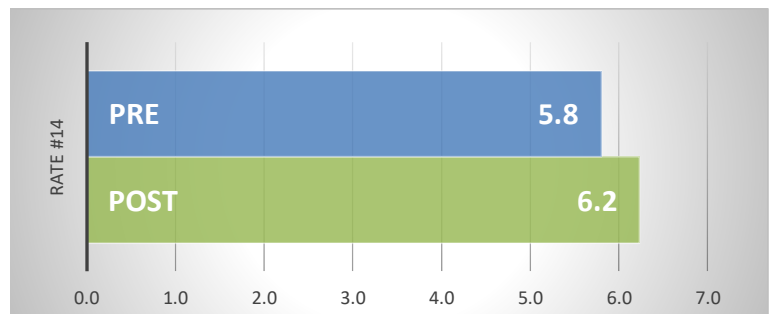
RATE #13 | My well-being can be enhanced through simple and predictable practices.

7-point Likert scale (7=Strongly Agree; 1=Strongly Disagree)



RATE #14 | I am accountable for my own learning and academic performance.

7-point Likert scale (7=Strongly Agree; 1=Strongly Disagree)



CONCEPT ANALYSIS

As part of the course assessment, students were asked to answer 12 multiple-choice questions designed to measure their grasp of important thinking and learning concepts.

Each multiple-choice question included four options, with only one correct answer (save question #4, which had two answers deemed to be correct).

Summary of Results

From the pre-assessment to the post-assessment, the percentage of students who selected the correct answer rose across all 12 multiple-choice questions. The total average score per student rose from 46% on the pre-assessment, to 80% on the post assessment.

See below for a statistical summary.

Data note: These statistics are based on the assessment data from 78 qualifying students. Of the 90 students who successfully completed the course, 3 failed to submit the pre-assessment (non-qualifying) and 9 submitted the pre-and-post assessment on the same day (non-qualifying).

Multiple-Choice Question Statistics (Overall)

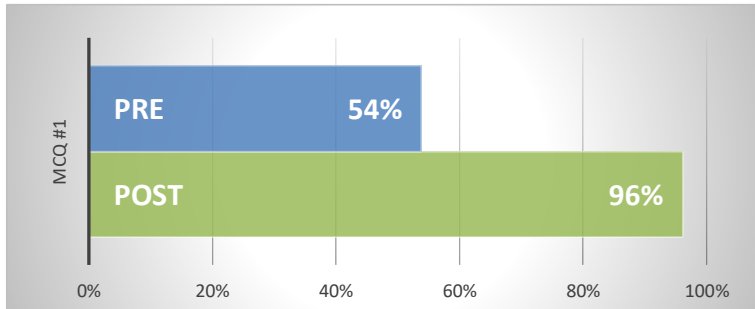
MULTIPLE-CHOICE QUESTION STATS (BY % OF STUDENTS ANSWERING CORRECTLY)

	QUESTION	ANSWER	% CORRECT (PRE)	% CORRECT (POST)	CHANGE IN % CORRECT
1.	Which of the following supports deep, meaningful learning?	The ability to recognize and embrace errors	54%	96%	42%
2.	Which is NOT one of the three ways to access your coder?	Increasing the difficulty of an activity	18%	64%	46%
3.	What makes mental visualization such a powerful phenomenon?	You can physically change your brain by mere thought alone	17%	68%	51%
4.	What is the essential ingredient for learning at a foundational level?	Repetition OR Recall	87%	100%	13%
5.	What always precedes skills?	Facts	6%	64%	58%
6.	If surface learning is defined by facts, deep learning is defined by _____?	Concepts	60%	68%	8%
7.	What is the only all-purpose skill you can apply across all contexts?	Learning	38%	60%	22%
8.	What are the three stages of memory?	Encoding Storage Access	36%	77%	41%
9.	Which of the following would be most effective for creating long-term memories?	Study one hour per day for three consecutive days	60%	90%	29%
10.	Which of the following is an optimal duration strategy for studying?	Short, focused study sessions	85%	100%	15%
11.	Which of the following is a foundational principle of memory?	Recall is key for creating deep memories	28%	77%	49%
12.	Which of the following study activities would be most effective for creating deep memories?	Using flashcards	65%	100%	35%
TOTAL			46%	80%	34%
AVERAGE STUDENT SCORE (OUT OF 12)			5.6	9.6	
AVERAGE STUDENT GRADE (OUT OF 100%)			46%	80%	34%
TOTAL SAMPLE: UNWEIGHTED BASE; n=78					

Multiple-Choice Question Statistics (By Question)

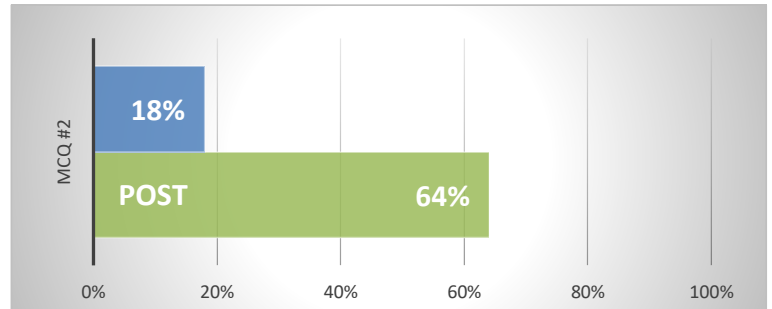
MCQ #1 | Which of the following supports deep, meaningful learning?

Correct Answer: The ability to recognize and embrace errors



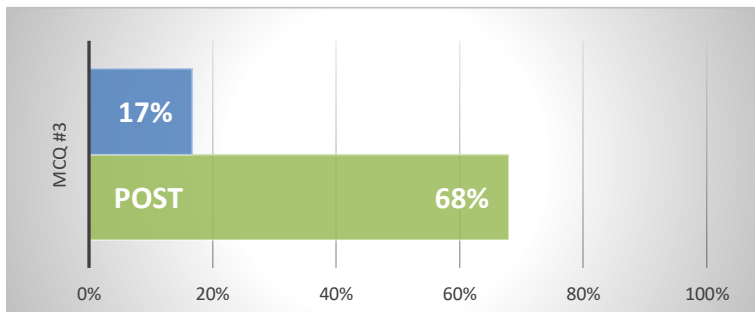
MCQ #2 | Which is NOT one of the three ways to access your coder?

Correct Answer: Increasing the difficulty of an activity



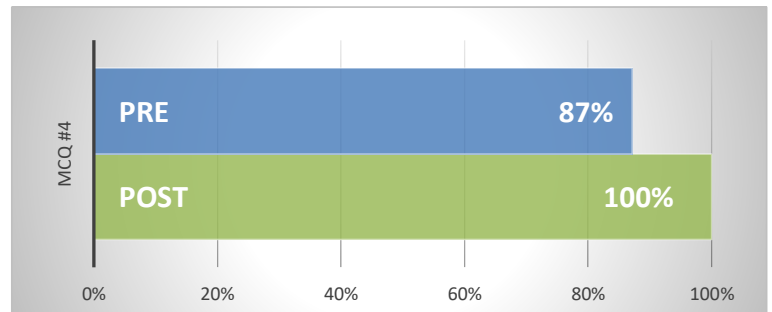
MCQ #3 | What makes mental visualization such a powerful phenomenon?

Correct Answer: You can physically change your brain by mere thought alone



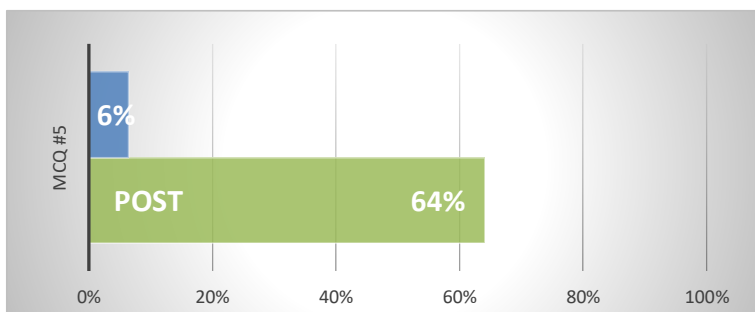
MCQ #4 | What is the essential ingredient for learning at a foundational level?

Correct Answer: Repetition OR Recall



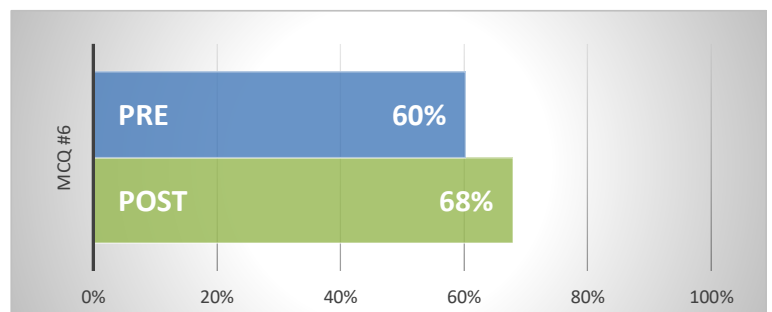
MCQ #5 | What always precedes skills?

Correct Answer: Facts



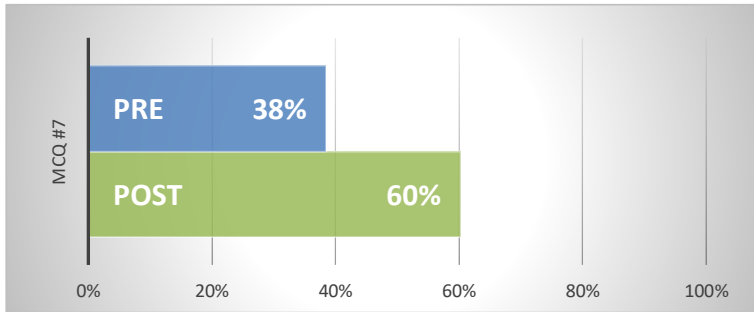
MCQ #6 | If surface learning is defined by facts, deep learning is defined by _____?

Correct Answer: Concepts



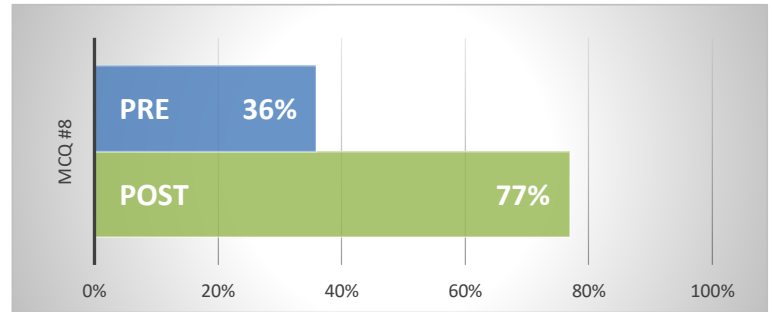
MCQ #7 | What is the only all-purpose skill you can apply across all contexts?

Correct Answer: Learning



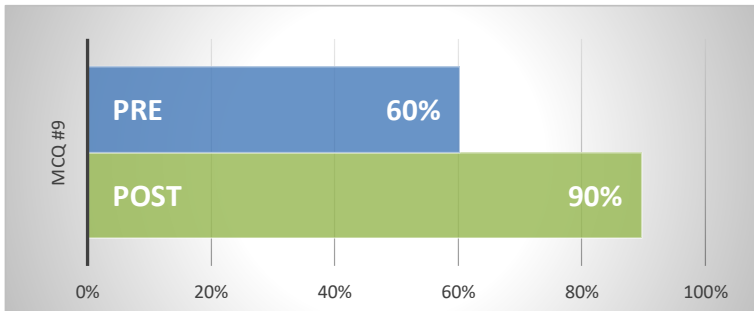
MCQ #8 | What are the three stages of memory?

Correct Answer: Encoding | Storage | Access



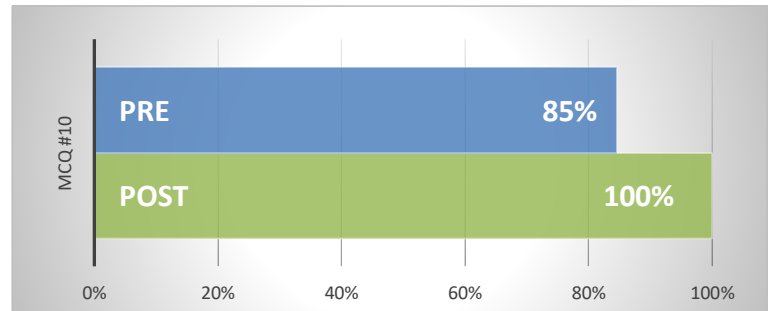
MCQ #9 | Which of the following would be most effective for creating long-term memories?

Correct Answer: Study one hour per day for three consecutive days



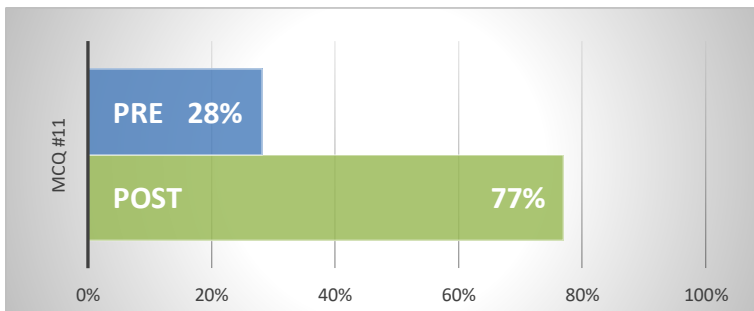
MCQ #10 | Which of the following is a foundational principle of memory?

Correct Answer: Short, focused study sessions



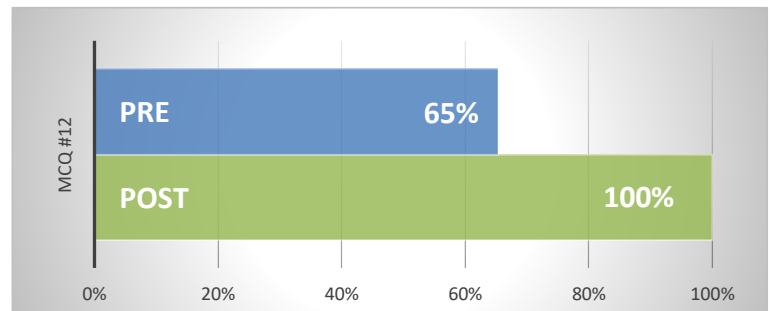
MCQ #11 | Which of the following is a foundational principle of memory?

Correct Answer: Recall is key for creating deep memories



MCQ #12 | Which of the following study activities would be most effective for creating deep memories?

Correct Answer: Using flashcards



STRATEGY ANALYSIS

As part of the course assessment, students were asked to respond to three open-ended questions designed to gauge their awareness of relevant academic strategies.

The three questions were:

- What are some effective strategies/techniques for remembering new information for a longer period of time?
- What are some strategies/techniques for increasing the effectiveness of your classroom learning time?
- What are some strategies/techniques for increasing the effectiveness of your study time?

Summary of Results

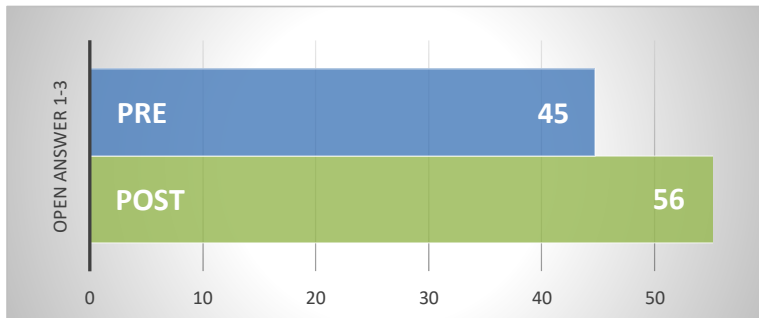
Because there is some overlap among the open-ended questions in terms of relevant strategies/ideas, we assessed the responses in total.

From the pre-assessment to the post-assessment, the average total word count that students used to answer the three open-ended questions rose from 45 to 56. This represents a 25% increase.

With regards to relevant strategies/ideas listed across the three questions, the average total count per student rose from 4.6 on the pre-assessment to 6.3 on the post-assessment. This represents a 36% increase.

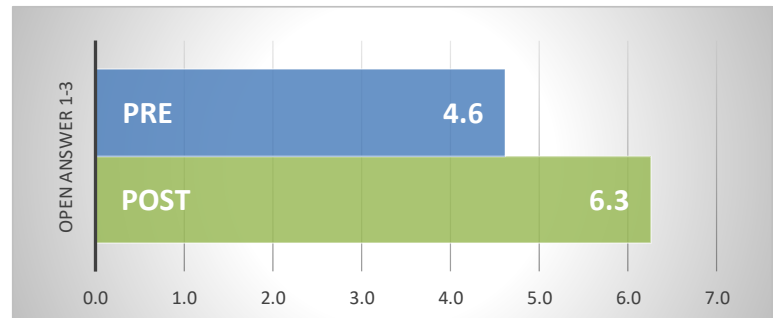
Average Total Word Count Used By Students

Open Ended Questions 1 - 3



Average Total Idea Count Listed By Students

Open Ended Questions 1 - 3



See below for additional commentary about each open-ended question.

Data note: This commentary is based on the assessment data from 78 qualifying students. Of the 90 students who successfully completed the course, 3 failed to submit the pre-assessment (non-qualifying) and 9 submitted the pre-and-post assessment on the same day (non-qualifying).

Open-Ended Question Response Commentary

QUESTION 1 | What are some effective strategies/techniques for remembering new information for a longer period of time?

On the pre-assessment, students demonstrated widespread awareness of the important role that spaced repetition/recall plays in the formation of long-term memories. Students also demonstrated familiarity with some useful learning tools including flashcards and past-paper questions.

On the post-assessment, students demonstrated a deeper awareness of effective memory strategies, and emphasized many relevant concepts including the efficacy of short and sharp study sessions, the vital role of sleep, the relevance of stories and context, and the utility of feedback. Students also reinforced the benefit of leveraging spaced repetition/recall exercises (versus simple review exercises).

Below are sample pre-versus-post assessment responses that illustrate some of the remarkable growth exhibited by many students through The Learning Blueprint:

ESF SOUTH ISLAND SCHOOL STUDENT | YEAR 11

PRE-ASSESSMENT	POST-ASSESSMENT
<p>Reviewing, observing it in action and recognising it (which helps the understanding of the concept), recalling it when needed</p>	<p>There are 6 rules for remembering new information: 1. We only remember what we pay attention to (so spend a couple of minutes before class setting your filters; do short sharp study sessions that ride our threshold), 2. We think in stories (elaborate and link), 3. Memory is contextual (study in the same areas as the exams; the ventral network pays attention to the surroundings, so use the context for easier access to information), 4. Sleep is essential (consolidation of memory; space out study with sleep in between), 5. Recall is key (pull information out to create deep memories), 6. Feedback boosts accuracy (makes sure facts are remembered correctly)</p>

ESF KING GEORGE V STUDENT | YEAR 11

PRE-ASSESSMENT	POST-ASSESSMENT
<p>Repeating, Active recall</p>	<p>When studying, short focused sessions are key. We should make an effort to recall information as it lasts longer. It is better to <i>spread</i> learning out rather than cramming. Sleep is also crucial for memory. Flashcards are a very good (memory) technique.</p>

ESF SOUTH ISLAND SCHOOL STUDENT | YEAR 11

PRE-ASSESSMENT	POST-ASSESSMENT
<p>Rehearsal, repetition helps us move information from our short-term memory store to our LTM store. However, different techniques help different people remember information better. For instance, visual learners would find flashcards and drawing things out an effective method, while auditory learners would find one-on-one conversations more helpful.</p>	<p>Short and sharp study sessions are shown to outperform 5-hours of studying w/ multitasking by 60%, for up to 6 months longer. The primacy and recency effect also show that we tend to remember the first and last things we pay attention to, so from this standpoint, 5-hour long study sessions wouldn't be beneficial for us to encode too much information.</p>

QUESTION 2 | What are some strategies/techniques for increasing the effectiveness of your classroom learning time?

On the pre-assessment, students primarily emphasized the importance of eliminating distractions, the value of asking questions/engaging with the class, and the merit of taking notes (in general terms).

On the post-assessment, students demonstrated a significant leap in their awareness of powerful classroom success strategies. They emphasized (in specific terms) many relevant learning concepts including the value of activating facts before a lesson (i.e. 'priming' the

brain), the benefit of conducting a brief recall exercise immediately following a lesson, the relevance of the 'attention threshold', and the advantage of focusing on the speaker (versus text-heavy slides or notes) during a lecture. Students also offered deeper commentary on the concepts of focus and attention, and they highlighted detailed notetaking strategies in more specific/cogent terms.

Below are sample pre-versus-post assessment responses that illustrate some of the remarkable growth exhibited by many students through The Learning Blueprint:

ESF SOUTH ISLAND SCHOOL STUDENT | YEAR 12

PRE-ASSESSMENT	POST-ASSESSMENT
<p>I would say active listening is important. Being in a calm, focused 'alpha state' and maintaining good posture helps improve focus. Taking good notes is important, such as by putting information on one side of the page and your feelings about the topic on the other side. Finally, it is essential to ask questions in or after class, as this will help clear up any misconceptions.</p>	<p>Firstly, we should always prime ourselves to whatever we are going to learn that day, by reviewing our notes from the previous class and re-familiarising ourselves with the topics. During a lesson, it is important to pay attention to one thing at a time -- which usually is the speaker and not the slides/graphs/charts. In addition, when we start to get distracted and our attention slips, we can walk around the back of the room, fiddle with something, or do a quick maths problem so that we reset our attention threshold and hold onto more information. Finally, if we decide to take notes at all, we should take quick, handwritten and deep notes, which allow us to consolidate our understanding of the important topics (although this may mean we forget the less important topics).</p>

ESF KING GEORGE V STUDENT | YEAR 11

PRE-ASSESSMENT	POST-ASSESSMENT
<p>I like to first read the textbook myself so I understand it myself and then hear the teacher explain. I like to then discuss the topic with my peers</p>	<p>Attend lessons early and prep/remind yourself of the previous content (this gets your mind prepared). Then, read the syllabus and know what you are learning. During the lesson, focus on either the speaker or presentation -- not both. Every 20 minutes, do something completely different for a minute or so to reset your attention threshold. If you want notes, it is better to hand write deep notes rather than typing shallow notes. After the lecture, write down everything you remember without looking at any notes (recall).</p>

ESF SOUTH ISLAND SCHOOL STUDENT | YEAR 11

PRE-ASSESSMENT	POST-ASSESSMENT
<p>Listening to the teacher, making notes. Spend some time after to ensure you truly understand and apply the concept into situations. Practice the skills</p>	<p>Rule 1: Ride your threshold; make sure to reset your threshold every 15-20 minutes by stretching, answering a question, etc. We only pay attention to stimulus stronger than our threshold. Rule 2: Pick your poison; listen to the speaker instead of reading the board. The brain can't process both at once. Rule 3: Take note of your notetaking; create deep notes that explain the meaning of and relationship between facts, rather than shallow notes that are a transcript of what's said/read.</p>

QUESTION 3 | What are some strategies/techniques for increasing the effectiveness of your study time?

On the pre-assessment, students demonstrated widespread awareness of the Pomodoro Method (the idea of embracing short and sharp study sessions spaced over multiple intervals), and offered a heavy dose of focus-related commentary (such as the pitfalls of multitasking and the importance of eliminating distractions).

On the post-assessment, students demonstrated a deeper understanding of effective study strategies, and highlighted many relevant learning concepts including context matching, stochastic resonance, over-learning, the vital function of sleep, and the value of setting goals via the dorsal attention network. Students also demonstrated a strong grasp of the mechanics that give power to the Pomodoro Method; they re-emphasized the futility of multitasking; and they reinforced the importance of eliminating distractions.

Below are sample pre-versus-post assessment responses that illustrate some of the remarkable growth exhibited by many students through The Learning Blueprint:

AVENOR COLLEGE STUDENT | YEAR 10

PRE-ASSESSMENT	POST-ASSESSMENT
Learning in a suitable atmosphere (e.g. for me: with music and fresh air); use of colours; taking organised notes or drawing schemes; taking 1 minute breaks to fix information.	Don't multitask. Study with short breaks after each 20-25 minute session. Use appropriate background noise (e.g. familiar music that you don't need to pay attention to). Recall important information before bedtime. If prepping for an exam, try to study in similar conditions.

ESF SOUTH ISLAND SCHOOL STUDENT | YEAR 11

PRE-ASSESSMENT	POST-ASSESSMENT
Study in shorter breaks, but with more focus. Review your notes and apply the concept (e.g. in past-paper questions). Spend some time recalling information (e.g. making consolidated notes).	Keep study sessions short and sharp: 25-minutes on, 5-minutes off. Do 1-3 sessions. Don't multitask. Match context to the outcome. Don't cram -- space out study sessions with sleep in between. Recall is key in studying to remembering information. Overlearn to boost accuracy and build a better understanding of concepts and stories.

ESF SOUTH ISLAND SCHOOL STUDENT | YEAR 12

PRE-ASSESSMENT	POST-ASSESSMENT
Studying in short, focused intervals helps me make the most of my study time. I find the Pomodoro Method useful as it keeps my concentration up and allows me to release any excess energy that I have. Also, staying organised and keeping my planner updated helps so I can stick to studying when it is time to study.	When we study, we should study in short and sharp intervals so that we can periodically reset our attention threshold. We should space-out our study time, and get a good night's sleep in the week leading up to an exam. This is because sleep is essential for consolidating memories. We should also focus on one task at a time and avoid multitasking, and set our filter to 'study mode' by focusing our dorsal attention system on studying (and not social media or gaming).