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How We Get Our Students Results

Microactive Engagements™

Spaced Retrieval

Productive Struggle

Multi-Modal Adaptivity

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Microactive Engagements™

The situation

Most tutoring sessions are 90 minutes, once-a-week, with no accountability in-between. Meanwhile, only 50% of students actually complete their tutoring homework. The result? Poor retention of materials and reduced ability to build on content/concepts taught in previous lessons.

The solution

Microactive Engagements™ are bite-sized interactive learning modules that can be completed anytime, anywhere. They are designed to maximize student interaction and retention, and provide opportunities for spaced retrieval.

Micro: completable in 10 minutes or less

Active: learn-by-doing (as opposed to watch & regurgitate)

Engagement: feels like a game, not a chore

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+200

Choose a Number Challenge

START!

< 10 minutes

🤟
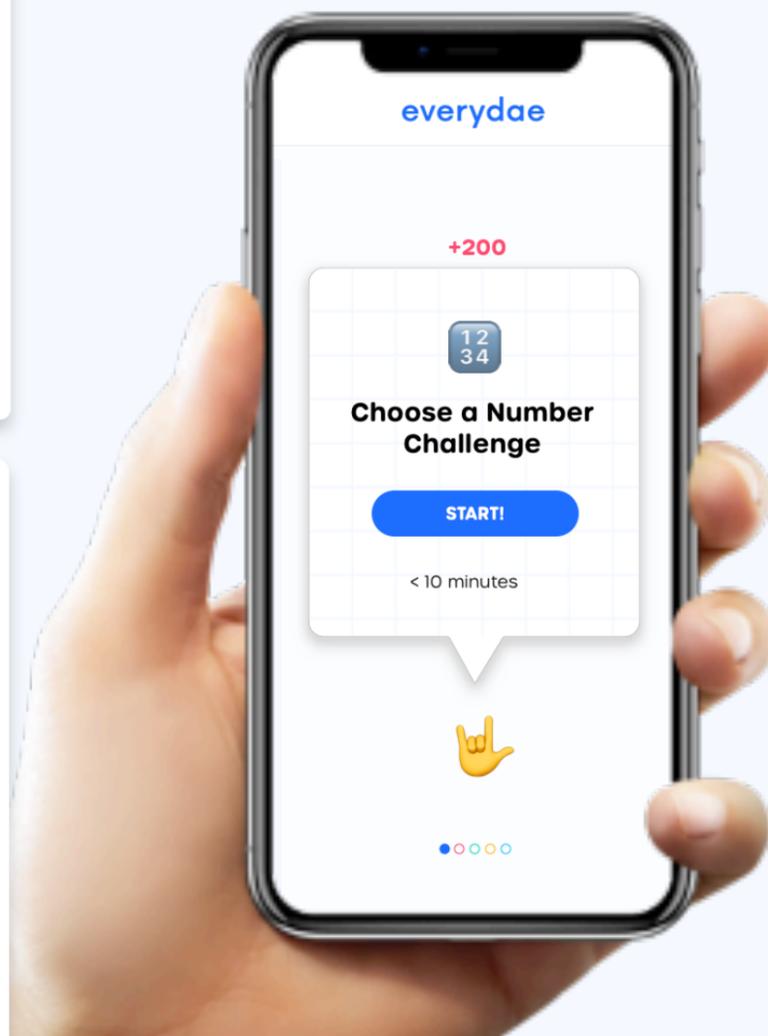
The research

Tutoring sessions are fundamentally at odds with how our brains and lifestyles work:

- ▸ In 2010, researchers found that student attention begins to waver roughly 5 minutes into a lesson and continues to falter approximately every 2 minutes.

- ▸ A 2015 study found that student retention is significantly better when content is consumed in small chunks.

- ▸ Homework loads have nearly doubled in the last 20 years, making it difficult to fit 90-minute sessions into already busy schedules.

How it works in practice

- ▸ Each learning interaction is 10 minutes long to maximize retention and so students can fit studying into their busy days.

- ▸ The system constantly analyzes performance and strengths/weaknesses so that the content served up can adapt over time.

- ▸ Game-like elements and quick wins increase dopamine and keep students studying.

- ▸ Fun "Extra credit" questions are interspersed between academic content to align with attention spans and give students mini-breaks.

What our competitors do

- ▸ Material is presented once a week with little accountability in between.

- ▸ Sessions are 60 – 90 minutes.

- ▸ Sessions can be tough to schedule around extracurriculars, school, and home-life.

Why traditional companies won't replicate it

If traditional tutoring companies were to concede that small bites are better, they would be undermining their overall business and cannibalizing short-term revenue.

Who uses it: everydae   duolingo   FULCRUM LABS

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Spaced Retrieval

The situation

A seminal study by Hermann Ebbinghaus showed that students forget between 50 and 80% of new material within the first 24 hours. Within a few weeks, nearly every piece of information from that study session is lost if it isn't reviewed in the in the intervening time. Spaced retrieval, a combination of spaced repetition and retrieval practice, counteracts this issue by resetting the forgetting curve.

The solution

Spaced repetition is the practice of reviewing a subject multiple times with breaks of hours to days in between, often at increasing intervals between review sessions.

Retrieval practice, also known as the "testing effect," is the practice of studying by testing your memory of a process or fact rather than just re-reading notes.
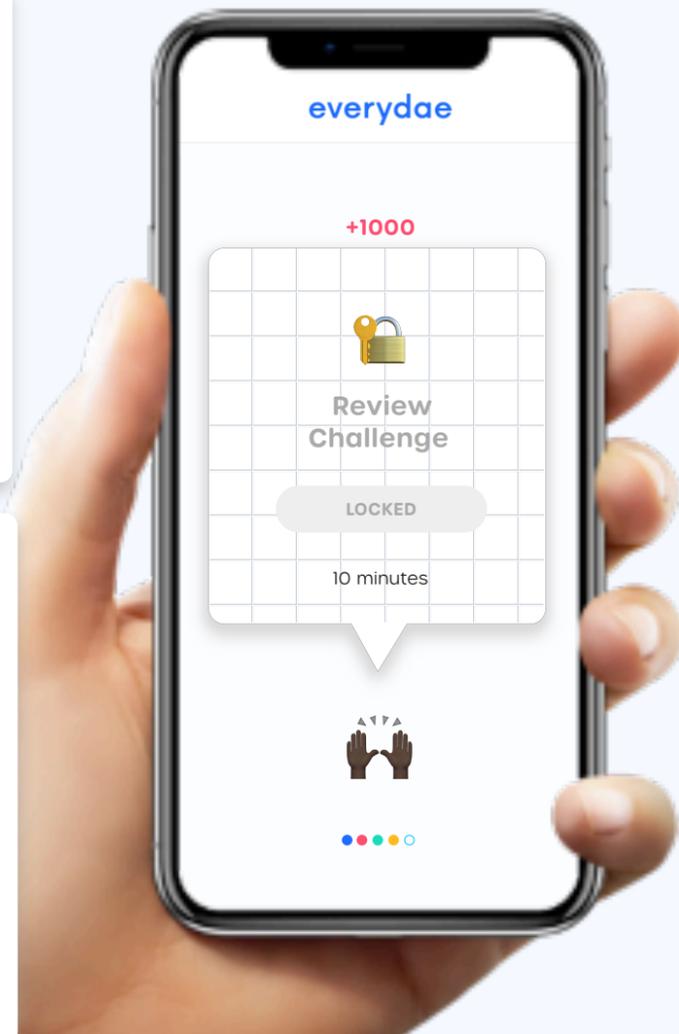
The research

▸ Research suggests that the act of trying to remember something makes it easier to remember in the future. Retrieval practice leads to significant increases in final performance over re-studying.

▸ Students who study a concept at increasing intervals outperform students who study in large chunks.

▸ A 2007 study suggests that spaced repetition is as effective for teaching procedural knowledge as it is for teaching factual knowledge.

▸ The same study found that spaced retrieval decreases the rate of forgetting.

How it works in practice

▸ Students practice topics at expanding intervals based on their comfort level with a given topic.

▸ Topics that are newer or harder are reviewed more often. Older and easier topics are reviewed less often.

▸ Rather than having students re-watch videos or re-read lecture notes, we get them to apply their knowledge. This helps them learn and helps us know exactly where they need help if they're struggling.

What our competitors do

▸ Material is presented to students only once during the lesson and only once or twice in the homework.

▸ While completing practice problems does count as retrieval practice, there often isn't enough repetition of any given topic to improve. For a single topic in a traditional prep course, a student might see a total of 5-10 problems outside of practice tests.

▸ Tutors often jump in too quickly when they see students struggling instead of letting them do the work of retrieval for themselves. This undermines the efficacy of retrieval practice and encourages dependence on the tutor rather than mastery of the subject.

Who uses it: everydae · duolingo · ANKI · memrise

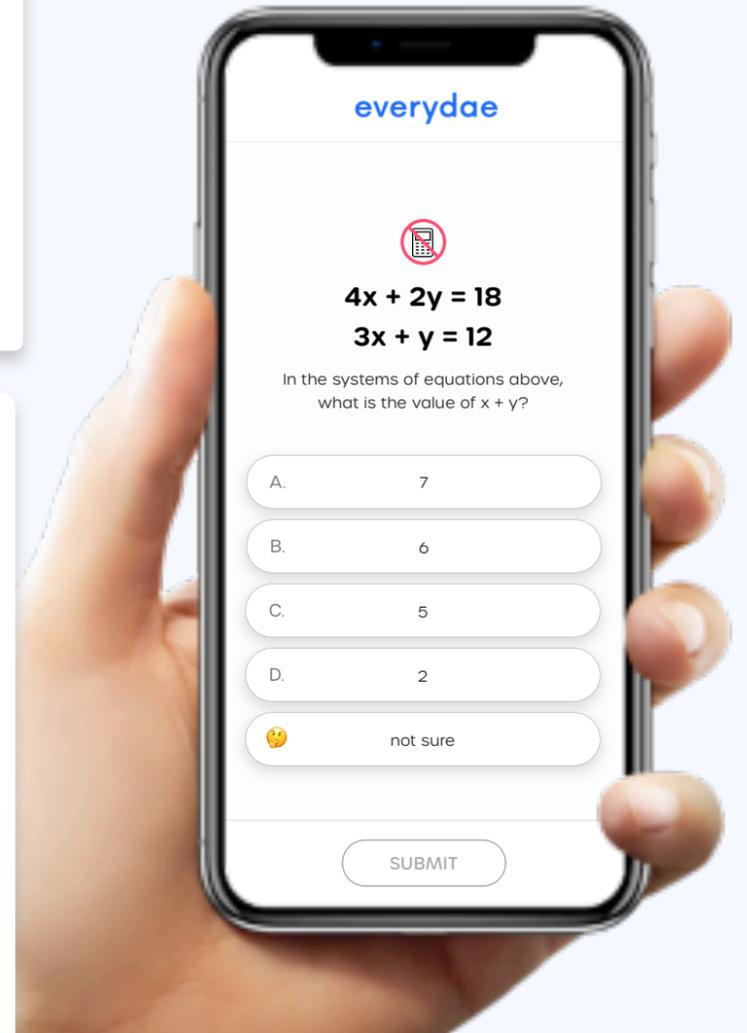everydae

Productive Struggle

The situation

Research indicates that students who are given a lecture and then asked to apply what they learned are worse at applying their knowledge than students who attempt problems first, and then get targeted corrections if they need them. And yet most online education uses a "watch, then regurgitate" approach.

The solution

Productive Struggle is all about learning by doing and is baked into every Microactive Engagement ™ . Students attempt problems before getting a helping hand. And because we're constantly assessing students' knowledge on every topic, we are constantly improving our ability to serve them the right challenge at the right time. This approach aligns with best practices of research-backed approaches, including:

▸ Process-oriented guided learning inquiry (POGIL)

▸ Problem solving approaches to learning

▸ Tutored-solution based systems

On-phone display:

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$$4x + 2y = 18$$
$$3x + y = 12$$

In the systems of equations above, what is the value of $x + y$?

A.	7
B.	6
C.	5
D.	2
🤔	not sure

SUBMIT

The research

▸ Using a POGIL-based approach leads to higher pass rates in first year science courses than does traditional instruction.

▸ Productive Failure (PF) is just as effective as both direct instruction (DI) and vicarious failure (VF) at developing procedural knowledge.

▸ In fact, PF participants outperformed both DI and VF students on conceptual knowledge and transference (the ability to apply a known concept to a new one).

▸ Increasing "wait time" (the amount of time before a hint is given) leads to better engagement and outcomes.

How it works in practice

▸ First, we give students a question that tests their knowledge on a topic.

▸ Then based on their response, we serve them a solution that explains why they got the question wrong. That same solution teaches them strategies on how to approach the problem type in the future.

▸ Lessons start with simpler questions, guiding students to the best strategy by building on what they already know. Then they progress to harder questions that force students to apply that strategy.

What our competitors do

▸ Most companies opt for instructor-led classes where much of the material is passively acquired through lecture.

▸ Tutors aren't trained to maintain wait time and will often give assistance before students have had time to struggle with a concept.

▸ Online products tend to replicate the in-class experience, focusing on passive lectures instead of problem solving-based approaches.

▸ Question bank apps offer the prospect of learning by doing but fail to teach overall lessons and strategies in their solutions.

Who uses it: everydae   duolingo   code|cademy   McGraw Hill ALEKS®

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Multi-Modal Adaptivity

The situation

No two students are the same, but tutors can have a tough time adjusting teaching styles for each students' needs because it's difficult for them to track the dozens of variables that lead to success.

The solution

Multi-modal adaptivity is the practice of varying instruction based on students' comfort with different topics and their relative speed of learning. Most adaptive systems adapt in one of three ways:

▶ By content

▶ By assessment

▶ By sequence

At Everydae, we're the first company to bring a fourth dimension to adaptivity: time. A student taking a test in three days should not be learning the same thing as a student who is taking it in five months – even if those two students are identical in every other way.

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🙌

Creating your personalized study journey now...
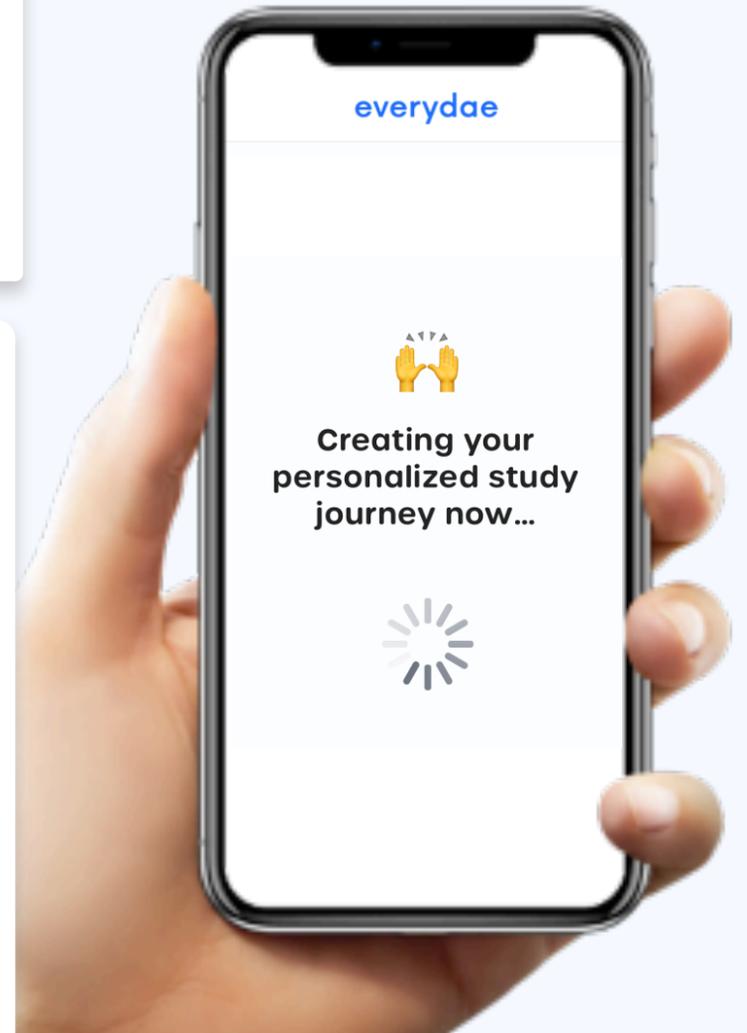
The research

▶ A 2016 meta-analysis of Intelligent Tutoring Systems reported that students who used ITS programs outperformed students who didn't, including students who received 1-on-1 instruction.

▶ When similar groups of students were compared, one adaptive system saw 19% more students pass math assessments compared to students who didn't use an adaptive program.

▶ An ITS program built for the US Air Force showed that 20-25 hours with the system led to the same level of competence as 4 years of in person training.

How it works in practice

▶ During onboarding, we assess students' strengths and weaknesses and the time they have remaining before their test.

▶ We use this information to construct a study journey that arranges the skills they need for the SAT in the optimal order.

▶ During challenges, we serve questions adaptively, providing students with questions that are challenging but not intimidating.

▶ After each challenge, we analyze each students' abilities in the subject they just completed to determine what they should interact with next.

What our competitors do

▶ Private tutors generally adapt their lessons "by feel," which works well for experienced tutors but poorly for inexperienced ones. This practice can also miss more subtle gaps in student knowledge.

▶ Adaptive programs for test preparation are generally designed to work as part of a tutoring package rather than independently.

▶ Live classes don't adapt at all. Students are rarely grouped by ability levels in different areas, so instructors must "teach to the middle" rather than offer differentiated instruction.

Who uses it: everydae   McGraw Hill **ALEKS**®

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