Announcer: Please welcome Ace Glenn, vice president of business development for Learn Everywhere.

Ace Glenn: Hi, everybody. That's my name, and there's been a lot of really wonderful talks here today about innovation, and most of them focusing on the different processes and formats, different systems that you can use within your own business to innovate, and I'm going to take a little bit of a different approach today and just going to tell you a story that's really simple, do it really fast and tell you how we innovated within the education landscape.

We're an education technology company, and my goal by the end of this, I do have a mission being here today.

I want to you walk out of this room and have your perception of education radically shifted in probably the opposite direction of where it is right now.

I believe that where we've come and the different ways that, different pieces of the puzzle that we've put together about the learning process and how it actually happens sheds a lot of light on a lot of the problems that we've had over the past three decades within the education landscape,
so my goal here today is to inspire a new sense of optimism, every time you think about learning and

education and hopefully the entire future of where we're heading.

I just want to get started here.

When you think about the history of education, and where we've come over the past couple of decades,

it's received more criticism and more reform, more standardization,

more time and money and energy than really anywhere else, and after a while you got to ask yourself, why?

How could we possibly spend this much time focusing on a single problem and have vague results,

incremental improvements, things that are hard to track and are pretty controversial,

and when you take a look at what we've snowballed into, you have school budgets that are suffering from

severe reductions, and school budgets are even tied to how well students do on standardized exams now.

It's no longer an incentive to perform well, it's a threat, almost an assault.

Teachers' salaries are impacted by student performance now, some of you may or may not know that.

If your class does poorly on these end of course exams, you don't get paid as much.

That's an assault. That's a threat. That is not an incentive.
That's where we've come and more importantly, now that school budgets and teachers salaries are tied to performance, this past year's algebra end of course exam, 59% of students passed, and we celebrated because the year before that, it was 46%.

That's a fail percentage, you know, in education, and we celebrated that.

I find that really odd, and so when you think about all of the problems that have persisted over such a long period of time, they all boil back down to one main factor, and that's learning.

If it wasn't for the fact that students have a difficult time learning, none of these problems would exist, if you're involved in education, some of these might look familiar but this is pretty much the past three decades of reform that education has received, so how has this gone on for such a long period of time and we've seen such little results?

There's only two possible explanations if you zoom out and go from a really high level.

Either we have a lack of ability, inherent like we can't process information any faster, or we missed something, there's a piece of the puzzle that we have yet to discover about how the
learning experience happens, and so let's explore both sides of that.

Lack of ability. Plausible option. So let's think about where learning happens, it's in the brain.

Let's think about how powerful our brain is.

The human brain is made up of 100 billion neurons which forms over 125 trillion synapses.

Think about that for a second. There are more neural connections in the brain than there are computer switches, connections, and internet routers on the entire earth, in one human brain.

So this is probably the most important part of all of this.

What that ends up as a result is that humans have an unlimited capacity to store information inside of our brains.

Did you know that? That's how powerful our neural processing is.

It's unbelievable, and we have an unlimited capacity to store information.

We were obviously built and designed as a human being to process information at an extraordinary rate,

yet learning is something we find incredibly difficult and in comparison of the rest of the things the brain allows us to do it doesn't make any sense at all, doesn't add up so then it's on to the next option.

Maybe we missed something. Learning being difficult makes no sense. It makes no sense at all.
It's a simple task in comparison to everything else that we are able to do,

so maybe we missed a pieces of the puzzle here.

So in order to answer that, and find that piece of the puzzle, you have to dig deeper into the learning process and really learning is just memory, it's just your entire knowledge base is comprised of individual memories that you put together to form concepts, ideas and opinions.

And so one thing that most people don't know about memory and about the learning process is that it was designed to do two functions, two different processes, it's not just learning.

Our brain was also designed to forget information on purpose.

The only time you've ever forgotten anything is because your brain intentionally got rid of that information, remember, we have unlimited capacity.

The brain only eliminates information it doesn't think are important and it has a framework for how it evaluates that information.

So let's take a look at learning and how that happens.
Learning, we focus so much on a term called the learning process, right?

When you think about learning, and you actually analyze it for what it is, it's not very much of a process at all.

It happens instantly. We absorb information even when we don't want to.

Have you ever been at a bar and didn't see the bull's game that night and you close your ears so you don't hear the score because you can't help but listen to information and take it in immediately.

So for instance right now, if I were to tell everybody the magic number today is 56, and then I wait a few seconds and I ask everybody what the magic number is, what are you going to tell me? 56, right?

It's really easy. The learning experience doesn't take very much time at all, as long as there's not an issue with comprehension, as long as you understand what's in front of you, we absorb information instantly.

It's almost to the point of being involuntary. I'll challenge you all to do this really fast.

I'll put a slide up here and I want to you look at the words but I don't want you to read it.

Just look at the words, don't read it. See if you can do it. You can't. We can't help it.

Our brain devours everything around us.
And so that brings us to the final piece here and what's less emphasized than anything in the learning environment?

That's forgetting, the process of forgetting.

That is where all the complication resides and it's hilarious to me because it's totally ironic but the key to learning resides in the process of forgetting and I'll show you why. It's much more complex.

Now we're not talking about do you understand it, can you repeat and regurgitate information, with we're talking how long is it going to take for you to forget that information?

How many days, how many months will you not be able to tell me the magic number today was 56?

That's going to happen eventually but that's a much less explored side of the learning process.

But it turns out that all of that happens according to a specific pattern, and we've known this by the way since 1885, a guy named Ermine Hibingus made the learning curve and there's actually a specific time for everything that you know that if you were to review it, the best time for you to do so is right when you're on the verge of forgetting, think of it just like a muscle, when you go to the gym, you don't work your biceps out seven days a week. You work them out, heal and work them out again.
The most important thing here is that the most important time for you to review information, the way that you can solidify that into your long-term memory and the most effective way possible is right when you're on the verge of forgetting it.

It's essential. And this is above the time that we have today, but this is a basic representation of how the forgetting process happens, so if you take a look at this red line, could you see the y axis represents how strong a memory is and the x axis represents how long that memory stays strong.

When you initially learn information, your brain gets rid of it rapidly, very, very fast, within a matter of 24, 36 hours, two days, it's because we devour so much information the brain has to get rid of it.

Like you're going to go home and in the next two days you won't remember what the color of the walls in this room were.
The reason is because it's meaningless and the brain has a specific way that it evaluates all this information that we're absorbing right now, and it only keeps the things that it is told are important and everything that we do right now, everything that we communicate to the brain inside of the learning brain and education environment contradicts that completely, it's totally wrong and we built the education system in a way that is opposed to how we're designed to absorb information. And it's called the spacing effect, Google it, if you have your smartphones I won't get offended, type it in, click on any of the first links on the front page. This has been around for a very, very long time and you never hear about it from teachers, from anything within education but this is the pathway to long-term memory, this is how long-term memory was discovered. Our brain is going to take in short term information and if we don't tell it that it should be kept, we're going to get rid of it, and remember we have an unlimited capacity.

Think about that. Do you remember who your teachers were when you were in the eighth grade? I can't think of one. I'm a young 'un. I can't remember, and much less the information I learned.
We have an unlimited capacity to store information.

There are frontiers about education that are totally unexplored and we're extremely excited about the future of that.

So coming to a close here, we believe that mobile technology is the answer to all of this.

You think about traditional tools, there's a lot of things wrong with them and how they're designed from a functional perspective, because textbooks, when you take notes down on paper, flash cards, they're all built, number one, to be used inside of a stationary environment and when you think of going and sitting down at a desk, you don't go for five minutes at a time in small little bits as you go on.

You go there for five or six hours, review the same pieces of information over and over again, take a test and on to module two.

Do we have a revisit module one? Not really, not until the final exam comes around a long time later.

Everything about what we're doing right now is learn, learn, learn, learn, learn, learn, as we forget, forget, forget, and review right before the test.

That is wrong. That's not right. That's not how we learn so mobile technology can change all of that.
I'll show you how. The company that I'm with is called Learn Everywhere,
and I have the most simple diagram ever to describe this.

So what we do is we have cloud technology that hosts and adaptive algorithm that can emulate human memory patterns.

Remember the graph we saw? We can calculate that.

We track all of your interactions and right when you're about to forget any item of information, we use push technology to tell you you're about to forget so it's calculating the exact time you're supposed to learn everything that you know right now, so that you never forget anything, that's really the key to education.

And when that happens, you launch the push notification.

It doesn't take to you an update in the iTunes store for angry birds to version 2.5.

It takes you to the specific learning item you need to learn at that very moment in time.

And that's what Learn Everywhere is, and so what we did is kind of
the opposite of what everybody else is focused on.

Lot of people are focused on okay, how can we improve the content, how do we make the content better,

how do we make inside of the classroom more engaging.

Inside the classroom isn't the problem.

Teachers are literally telling you exactly how to comprehend the information.

The problem is what happens outside.

Right now everything about learning outside of the classroom is very, very -- it's not good, so we built a system that prevents forgetting and that's learn everywhere and I'm Ace Glenn and I'm done,

so thank you very much.