Video 1

I’m Professor Stephen Heppell. I’ve been a professor for 30 years now and a lot of that time has been spent trying to make learning better, which is not a bad thing to do.

Video 2

Hello, I’m Professor Stephen Heppell; I’ve been a professor for 30 years this year, and for the last several years we’ve been researching the learning spaces environment in hope of making learning a lot better. We’ve been looking at the tiny details that singly just sound like common sense; better light, better temperature, better ventilation, less co2, but together that aggregation of marginal gains that we’ve learned from sport transforms learning and with children all over the country and all over the world working so hard to be the best they can possibly be, we’re trying to give them the environment that allow them to be personal bests every single day of their learning lives.

Video 3

People talk a lot about wellbeing and what’s good for your body. What we’re interested in is what’s good for your brain and little details can make such a difference. If I’ve got a classroom full of students who are all working hard, breathing, then 30 children in a class with a door shut breathing in oxygen, breathing out CO2, the CO2 starts to fill up the room like a swimming pool and quite quickly. The part per million goes way above the thousand parts per million that we know is about the limit of what’s best for your brain. What an we do about all that? Do we have less children? Do we open all the windows? Well, simple things can help. Plants. There’s one plant for every child. The plants do a pretty good job of absorbing the CO2 and producing more oxygen but of course they do it by absorbing light so it helps if we put the plants in white flowerpots and the light level, of course, is determined by the quality of lights in the ceiling. And this is all complicated but none if it is hard. We want the best, brightest whitest light we can get. We want kelvin numbers right up as high they’ll go for the lights and we want them to use as little electricity so, of course, LED lights make a good replacement for those tired, old, fluorescent tubes that are flickering away and distracting the children. When you get the oxygen and the light and the temperature and the other things right, each one of those is important but together, it’s flipping stellar.

Video 4

Good teaching is a craft and a science. The craft is about trusting your judgement and your common sense. We know that children in a dark corner are struggling to concentrate. We know that when it’s really hot, it’s just really hard to have a good idea. What we’ve got from the research, though, is hard numbers. We know what too hot looks like. We know that 18-21oC is a sweet spot for learning. Every degree above 21oC, your ability to learn well goes down and it’s a straight line. Every degree is damaging. There’s something about having the data and giving the data to the children that helps them to say ‘You know what? I know when it’s a noisy classroom, I struggle to learn but now I’ve got the numbers; if we can, together, keep the numbers down under 70 decibels, we can have a really smart morning’. And children want to learn better. The science is there, the craft is there, now we’ve got the data. Put it all together and we’ve got better learning all around the world.

Video 5

When we started helping elite athletes with their learning, because they’ve got to learn; they don’t just turn up with a javelin and chuck it. You’ve got to know aero dynamics and materials and science and nutrition so we were helping them with their learning. We learned from them, of course, and we learned about that aggregation of marginal gains and everything really matters. So, we started building our little prototype devices to which came to call our Learnometers and we were interested in what data we could get back and, of course, it’s hard because you want them to calibrate right. If I’m measuring my classroom and now, I’m measuring it in the Autumn, I want to know that the sensors are roughly reliable enough that I can compare. When we built the first ones, we put the temperature sensors on top and as they did more and more data capture, they got warmer and that didn’t work. So, we did a lot of iterations. We built one, we 3D printed the cases, we designed the PCB on a computer like a super STEM project really. But each step of the way, we found something new. We found something we didn’t expect and that’s the great thing about research. We’re now making a final product. It’s a wonderful little box. We’re sharing it with the world and we want the world to come into our research family and to be part of the excitement of seeing how much better we can make it. If I think about Olympic sport, if I go back to Atlanta with team GB who won the gold medal and then I think about Rio, so many people winning medals that we can’t even remember their names. That change in performance is what we want to see from our children’s learning. Obviously, we want to see their test results as good as they can be, and the exams probably representing their hard work they’ve put in. That all matters but we also want to see them full of delight, enjoying their learning, engaged, can’t wait to see what tomorrow’s going to bring, reluctant to go home at the end of the day because learning is so engaging and enjoyable. All that comes from our data and all that comes, I hope, from you having a little play with these boxes too and sharing with us what you’ve learned. We’re all in this together.

Video 6

One of the joys for me being part of the Learnometer family is there’s a team of us doing all of this. We want people with real expertise in different areas; in automotive design, in the internet of things, in organisation, in customer facing problems, we’ve got people who know what they’re talking about and bringing all that lot together is actually rather joyful. It’s like getting a really good team together because it is a really good team and that lot lay at the heart of all this. I’m just part of the game and proud to be so.