



Nat: I am pleased to have Matthew Arnold here. He is a 25-year educational technologist at several schools from Chicago to Los Angeles. Matthew, we're going to be having a chat today about technology in the classroom. It's good timing to have this podcast episode because there was an article I read just about a week ago in the Wall Street Journal about parents who are pushing back on their kids' school districts and really with a greater voice now and a greater concern. Because what they're arguing is that there's been all this money spent on technological hardware in the classroom, and yet what are the results? What's the return on this investment?

Nat: In fact, not only that, what parents are seeing and questioning is the positive constructive use of technology and whether or not the technology is being used in positive and constructive ways. There's the skeptical side of technology, we've been in and about probably... Well, when I started teaching it was 1993, and we had no internet, no email. We had an office phone, and I'd be lucky if I got the message that my parent called me, I need to get back to her. Whereas today we've got email, we've got texting, we've got social media. We've got all the different angles of technology that have been pretty openly included in schools. I mean, it's very, very rare to come across a school that doesn't have a smart board or a one-to-one laptop program or whatnot in the classroom. So there's a lot to unpack about technology, because we can... And I'll have you start off with the lens to start unpacking it with because there is the social emotional lens.

Nat: There's the educational lens. There is the psychological lens. We know that there are disturbing research reports about students with higher levels of anxiety and depression today than 10 years ago. Then 2011 is the year when depression and mental health issues started spiking, particularly among girls, but also among boys. That was also one of the earlier years of the iPhone coming out. All of this going from My Space to Facebook to Snapchat to the black web, all of that stuff influencing what really was meant to be a resource, this worldwide web massive sharing of infinite ideas in collaboration. Now it's kind of untamed and in schools. I say all this to kind of set the foundation for, again, what could be an incredibly wide range in conversation with one of the experts on education and technology. I would like to just actually leave room for an opening statement from you, Matthew, if that's all right.

Matthew: I think the first reference to that article, that parents are finally pushing back, I've seen technology evolve from a full desktop environment where schools had

closed networks on one campus or students couldn't access anything from home, so then they started adding emails so students could email things back and forth. Then everything from the desktop world to a laptop classroom to mobile laptop classrooms to tablet classrooms to wherever we are now.

Matthew: I don't think that anyone has really stopped to evaluate are we doing this right? It's been sort of an arms race where it's all been about nouns and not verbs. So much of the focus has been on, how much hardware do we have? Do we have smart boards in the rooms? Do we have Macs or PCs? Are they laptops or are they MacBook Airs or MacBook Pros?

Nat: Because the schools in the district down the street or in the other town have that, so are we keeping up with the Joneses? Is that what you mean with the arms race?

Matthew: Exactly. Yeah. Then you see even on school tours, I used to give... One school I was at, we had to present as part of the open houses. I'd have sixth graders coming in saying, "Do you guys have smart boards in every classroom?" I was like, "Well, actually, we don't really think that's a necessary tool for learning." I always would use Vanna White as the smart board reference, because she's seen-

Nat: From Wheel of Fortune?

Matthew: From Wheel of Fortune, because she seems to be the most... She uses the most interactive board as a career. Other than that, I mean, you can be Vanna White or you can be the guy doing the CNN electoral map tallies and having an interactive smart board as well. But other than those two jobs, I'm not sure where that smart board technology really comes to value. I think teachers tend to have their styles that have evolved over the years, and putting everything into that one digital screen is not necessarily the most effective tool. It may be efficient, so if you're looking at things from a profit margin, time-space paper printing value kind of metric, it would seem on paper valuable, but as far as the deeper meaning and how the children are learning and evolving from that, it's not always fully thought out.

Matthew: So yeah. The nouns of technology are Apple, Mac, PC, tablet, smartphone, all that kind of stuff. Then the software conversation that was a big deal at the beginning was Word Perfect, Microsoft Works, Word. There were all these different formats that created a lot of conflict in the classroom and then, finally, when the Cloud platforms really evolved with either Google Cloud or Microsoft Cloud, there's no more format issues, which used to be the biggest deal. Now it's like, "Okay, so now we have a word processing program, which is the noun, but the verb with that has to be collaboration and creativity and critical thinking and communication." We have to be looking at these verbs of how this learning evolves and not just try to make it about the technology.

Matthew: When the iPad came out, so many people were like, "Oh, these are the future." As I kept looking around, I'm like, "Where in business are iPads being used?" The most common place we see them now even is as cashiers. So we had this great idea to give second graders iPads to start learning because they needed to

be prepared for the future of business when those future jobs are maybe taking orders at Starbucks. If we're looking at it from the noun point of view, yes, they know how to use an iPad, but an iPad is intuitive to human behavior. You put an iPad in front of a one-year-old and they watch someone else do it, where you take your finger and you point and you swipe things, they get it. It's a good door knob. It's like drinking out of a cup. These skills are not highly-evolved skills that we have to hone for 12 years in academic settings. The things that we do need to hone for all that time in academic settings are collaboration, communication, empathy, critical thinking. Getting those skills into students' consciousness, is way more important than any noun of technology.

Nat: How does technology help with developing skills in empathy and communication and collaboration?

Matthew: Well, I think they enable... The two of us could collaborate on a document. You can be in London and I can be in LA, and we can be working on the same document live. All the technology is doing there is bridging the gap. Bridging the gap of time and space. Twenty years ago, we'd be FedExing manuscripts back and forth, and we'd be collaborating, but the time would take longer. Now, I can write something, email you, say, "Hey, I put something up." You can wake up in London, you can add to that document. And so, that time gap has been bridged, so we have... The technology has enabled a lot of great things, but we have to continue to practice that evolution in learning.

Nat: I was kind of being cheeky about how technology has helped the collaboration and empathy because... And you answered it actually in the most open way I could imagine. Because you are saying, this is very positive because we can communicate from 8,000 miles away. But you and I could be sitting right now across a desk from each other in a seventh grade English classroom, and how would technology be helping us collaborate on an essay or on a research report?

Matthew: Well, I mean, you can do that same thing. Essentially, the two of us can be sitting next to each other or we can be 10,000 miles apart. As long as we're sitting at that same document, the verb and the exercise that we're doing is collaboration. Whether we're in the same room, whether we're on the same device, whether we're doing it on a piece of paper, that is the important skill. That's why technology doesn't always open up these 21st century skills. We can be collaborating on a whiteboard, we can be collaborating on a big piece of paper. We can be collaborating just with a piece of clay and we pass it back and forth. That exercise is the important skill for learning. Technology only is supplementary to that activity. In the book that I've been working on now for years, it's kind of documenting this technological evolution. I talk a lot about additive and transformative ideas.

Nat: What's the difference between both?

Matthew: An additive technology would be, let's say, for years you've been doing a crossword puzzle to help understand the Civil War vocabulary. That's an ongoing worksheet that has value, it reinforces some memorization stuff that they'd have to know for these types of disciplines. But then, Apple will go and say, "Oh, well, once they have an iPad, you don't need to do those photocopies anymore," which is great. You can then save 20 sheets of paper every time you're doing

that Civil War lesson, but you have to add the cost of a \$500 screen to go on that, plus the cost of the labor to deploy those screens, plus the backup to manage the damage that happens. We see that like 15% to 20% of screens will break. You give a fourth grader a piece of glass and you have them working on a table that's three feet off the ground, once in a while those-

Nat: Gravity happens.

Matthew: ... screens are going to fall onto the ground and the glass breaks. We don't give the kids glass cups to drink out of, but then we give them screens that are made of glass and we think that's some type of 21st century skill that they're learning? I mean, I think that's part of the anxiety that we're seeing in kids is not only are they... When you have 10-year-olds, 11 year olds walking around with \$2,000 computers in their backpack, I mean, when I was 10 or 11 the most expensive thing in my backpack was the number two pencil.

Nat: The Trapper Keeper.

Matthew: Yeah. Yeah, the Trapper Keeper. That was the most valuable thing in there. Now that Trapper Keeper is 1,000 times more expensive than it was. So that anxiety is real. These are still real costs. Parents still have pressure of like, "Don't lose the \$2,000 thing in your bag." I don't think that's the only source of anxiety, I think it's just one of them. It's like this Alan Watts thing where the more technology you get, the more consequences come with it.

Nat: So that was the additive definition. The definition of additive being technology used as an add-on essentially? Right? You could be collaborating on an essay together over a whiteboard or a piece of paper or whatever, but let's add technology or add an iPad, and it makes us feel like we are keeping up with Joneses. It makes us feel like we're 21st century learning when in actuality it's not necessarily a given that it is enhancing the learning. Transformative-

Matthew: So then transformative-

Nat: ... is what you want to focus on, right?

Matthew: Yeah. So then transformative would take that idea, that Civil War vocabulary assignment, and transform it into something bigger and better than it was. What started out as a crossword puzzle, which is... We see it in the New York Times every day, and it doesn't change our lives, but it's a part of our consciousness. We know how they work, we know how to get words in it, we know the different types of questions they have. Then a transformative assignment, if they have to have a tablet or a laptop, perhaps they start creating digital puppet shows where they're learning the skill of visual communication. Meaning, "This is how you design a character and these are the blue people and these are the gray people."

Matthew: Then you start to create whether it's a comic strip or a video or a film. These types of media projects become transformative. When we look at the data on these kids, the eight to 18-year-olds, are consuming between eight to 14 hours of screen time a day. That's consuming it, they're not producing much of it. And so, we have to shift the model and really look at the data that we do have and be

like, "Look, we are training these kids to be consumers. We need to train these kids to be producers." So when we flip that consciousness, then all of a sudden we can start thinking differently.

Matthew: Instead of just giving them things like, instead of it being a Civil War crossword puzzle, somebody gives us prefab video content that the kids watch, and then we evaluate whether they comprehended it by using the crossword puzzle. We actually bring story into the conversation so that then they can start to empathize with the people that lived in the North or the South or whatever. Then they can start to really find valuable lessons to be learned other than just memorizing which side wore the blue, which side wore the gray. That's okay, but it's sort of factual, but we need things to be more that transformative piece where they can start to really apply all different types of thinking.

Nat: That's so well expressed. I love the example of the Civil War vocabulary, just as an example of what additive is, which is the idea of you can learn off flashcards just as well as you can learn off of an iPad. Or you're adding the iPad in order to catch up with the Joneses. But also a transformative is the idea of step in the shoes of a female Civil War soldier, and write from her perspective about what it was like to serve for the Union Army, to really be story-based, transformational based. That is how we want technology to be utilized in the classroom. But so often, I know you haven't said this outright, but would do you agree with the statement that one of the catch 22's is that we are not seeing technology used in the classroom in as much of a transformative way as an additive way?

Matthew: Yeah. I think that seems to be the main use. Even a school's value is being measured by the amount of gear they have and not-

Nat: The number of nouns.

Matthew: Yeah, what's your noun budget? That's cool, but what's your verb budget? Because that seems to be the miss. Schools will invest \$500,000 on hardware and less than \$500 on training. When you look at that, that to me is obvious. Okay, you're spending 1% on the training and all the money on how to use... not how to use the stuff, just on getting the stuff. Then that whole, that IT argument that you hear a lot, "Oh, we just want to get it in our hands, and then we'll see what happens." No. If you have to wait and see what happens, you don't know what's going to happen or have an intention to what's going to happen, you're not going to be successful.

Matthew: That's the thing. We don't really have any programs to evaluate the success of a technology program. The success of these programs is, "Okay, did every kid have a laptop? How many broke this year? Success." No. A success has to be how did these devices transform the learning, and sometimes I think the device is more of a distraction than it is a benefit-

Nat: A beneficial addition to the learning environment.

Matthew: A beneficial addition to the learning experience.

Nat: Yes, that makes sense. Learning experience. Learning experience, which is never supposed to be passive. In fact, learning is challenging. It's an active process. Again, when you're getting back to the additive, the "I'm going to passively consume information from technology," that doesn't mean you're learning. In fact, brain studies will show that students who are just learning passively, watching videos, watching... it doesn't go nearly... It doesn't fire up nearly the neurons in the right area of the brain as if you are collaborating face to face like what we're doing right here over let's create a story about, again, a female Civil War soldier or something and really learn in that way and dig deep and fire up other neurons.

Nat: This is interesting, and this has been really focused on the instructional part of technology and its pros and its cons. What I'd like to actually move into is more of the emotional and psychological angles of technology in the classroom because you said earlier that the anxiety an eight year old has when carrying an iPad in her backpack or in her hands... I remember when I was a principal at an elementary school when we just had iPads. I remember requiring when students were walking from classroom to classroom that they had to hold the iPads with two hands.

Nat: I didn't think much about it. I was thinking that more for us, for the school, because we know that as you said, gravity happens. Glass breaks. I didn't really think honestly about how that messaging resonates with an eight year old, in an eight year old that wants to do well, who wants their teacher to like them, who wants to be a good person like all kids. The idea of you have to hold this with two hands probably put a lot of pressure and anxiety on them. Launching from there, what have you seen in your career here sweeping from the introduction really of email and certainly internet research to now cellphones in the classroom and mobile devices and whatnot on an emotional way?

Nat: In my book, by the way, which Matthew is profiled in in Time to Teach, Time to Reach, there's a fantastic example of journaling that Matthew talks about and how back in the day you would journal, and then you compare it to what a student would be using today for journaling. Maybe we can start with that, the inner world of a growing student and that relationship with the external world and how technology has impacted that.

Matthew: I think that... I like to talk about Best Buy a lot. If you go to the TV section at Best Buy, they got 40 TVs on and maybe there's two or three shows playing. Technology is that. There's always other TVs playing and access to other TVs playing and other ways to interface with the screen itself. So the level of distraction is like we've never seen before. You can fall down the rabbit hole of her own personal phone, and three hours later you look up and you haven't done anything. You haven't accomplished anything. You haven't really learned much, but you've consumed a lot. You've interacted a lot. Without a whole lot of awareness you're getting these little dopamine hits every single time you text somebody or they text you. "Oh, somebody wants to tell me something." Then you look at your phone, and you're like, "Oh, is it going to be 3 o'clock or 4 o'clock." Okay, 4 o'clock. Then it comes in 10 minutes later, oh, someone sent... "Is it going to be pizza or hot dogs?" Pizza.

Matthew: Then in our minds that is the... Emotionally, our bodies don't know the difference between getting excited for a text message or winning a slot machine or watching a sporting event.

Nat: It's the same feeling is what you're saying? It's the same thing-

Matthew: The dopamine released is exciting and it's satisfying, and then we start craving that feeling. Kids when they're starting to be conditioned at that young, young level to be getting that dopamine response, which is the equivalent of what drug addicts are craving, so there's a craving and then a satisfaction and then craving and satisfaction. Then they constantly are chasing that. That's why they're comfortable sitting on their phone for three to four hours because all they're doing is just giving themselves a quick hit back and forth. I totally lost track of the original question, but-

Nat: The idea of getting those... First of all, actually it's related because you're talking about the ping that comes with every text or whatnot, every notification, and how that is so distracting and interruptive, but we are raising a generation where that has become the norm. The impact of that on focused... I was talking about journaling. I was talking about just... because, look, we're working with kids and adolescents. Right? We are working in the most prime, cherished time of their lives where their foundations are being set. At the same time, technology does impact the biology, the neuro pathways, again, reconstructed through these technologies, that are influenced by technology, the brain's plasticity is.

Nat: All of that to say about the impact of technology on one's growing emotional state of mind and the journal example is one that makes me think about that and also what you just shared about the constant interruption of the dopamine hit.

Matthew: Yeah. I think in your book you talk about my college life where I had those composition books, which I thought were great because the pages were bound. They didn't have perforations so you weren't losing any. I traveled through Europe. I lived for a good eight years of my life pretty much writing every single day nonstop. If I was in between classes, I'd go sit in the student union, I'd get lunch, and then I'd open up my book and write a page or two. Today, if I was... It doesn't matter. Any student on a college campus today has that time off, they're opening their laptop, they're checking their email, they're on Facebook, they're doing social things, or they're on their phone doing the exact same thing.

Matthew: But the benefit that I have and a lot of what those books I now call the last days of analog because that experience will never happen again, period. There's never going to be a student who's going to be able to sit and observe the world the way I did because either they're going to be distracted by their own device or they're going to be observing other people who are entirely distracted. There's not even an authentic observational opportunity today whereas before when somebody was anxious you could see it, and you could see why. Today, everyone just retreats on their phone, and they hide their real state of mind.

Matthew: Because if they're anxious, they're, "Oh, I was just trying to order a pizza. I can't figure out how to do pepperoni." It's like, that's not a real thing, but that's how we're revealing ourselves to the world. We're creating these false selves. There's

a whole chapter I talk about lies because kids are lying about their age to even join social media, and they're lying about what they look like to be more attractive. They're using software to enhance their own look, which then, imagine that, if you have this super handsome online existence, and then people see you in real life, it's like such a disappointment.

Matthew: They're setting themselves up for pure disappointment because who they want to be is not who they are. Online you can display who you want to be and it can be any version of that. This generation doesn't have the time to reflect on how they are. This is the time where they are figuring out who they are. What's happening with social media is kids are presenting a version of themselves, and then they're letting the audience dictate who they are. They're like, "Oh, my God. They really liked when I wore that bow, so I'm going to keep wearing that bow and keep doing pictures in that bow and keep using this filter."

Matthew: That's the inventory that's going through, especially young girls. That's the stuff that's going through their minds because they're like... They are quantifying how successful they are. Then I talk a lot with my film students about how do you evaluate things. When you have... We talk about quality versus quantity. You show them a video on YouTube, what's the first question they ask afterwards?

Nat: How many likes?

Matthew: How many views does that have?

Nat: Yep.

Matthew: How many likes does that have? They want to know the quantification of that thing so they can know if they can connect with it. It's like peer pressure on a global scale. If everyone's doing it, then I know it's okay. But if everyone's not doing it, I'm suspicious. What we have to do is get to them and let them start to think critically both of about who they are and doing that self-reflection on top of who is everybody else. Who are they trying to be as well? Because this whole generation just missed the self-awareness part of the classroom, which we never really had structurally. It was just sort of what happened organically, but now, kids can be like, "Oh, I think I'm an introvert." And you go, "Oh, I just took a quiz, am I an introvert? It says yes. You're trying to get me to go out, and I don't want to go out because I'm an introvert, see?"

Matthew: It's not because they're depressed, it's because they're an introvert. Everyone is becoming so self-diagnosing but not self-aware. It's like they want to have these identities. Gender identities are becoming a huge thing, sexual identities, so everyone is hyper categorizing themselves, which is getting in the way of their ability to really figure out who they are.

Nat: There's a nuance to really figuring out who you are to a true self definition. It's a nuance. It sounds like when you've just been talking about this identity, the external identity, it sounds like they're figuring out which armor to wear or which veneers to present themselves in. It's fascinating how you said earlier it's about quantitative... They're using quantitative metrics, Matt, to gauge something that's



interpersonal, something that is actually extremely quantitative in human. There's a disconnect with that for sure.

Nat: If you were to give any advice to schools or if you were to build a school today... Let's add this question. If you were to build a school today as a haven and optimal haven for kids and adolescents finding themselves so that when they're 18 they can leave to wherever but have a solid sense of self-knowledge, how would you envision the school's approach to technology to be?

Matthew: I like to call it access not excess. I think it's the school's responsibility to set that tone. Excess is I think where we currently are where it's just kind of like pepper every part of campus and every lesson with some type of technology where it doesn't have value. It's just quantity. When we really break that down, if excess is quantity and access is quality, we have to look at helping these kids access that part of themselves so that they're doing that self-discovery, that they're using the tools and reinforcing all the skills that they're going to need, but not with an excessive amount of anything on top of it.

Matthew: First and foremost, phones should be banned from campuses.

Nat: Like the country of France has banned phones from schools last year.

Matthew: There's no logical argument for phones to be in the hands especially of high school kids, and yet that seems to be trending. Middle schools can get away with no phones. High schools for some reason are fighting it, and the kids are running the argument there. When they don't really have the perspective of what those devices are going to do to them as well as people that have been in education for 20 years and they've seen that, yeah, education worked when we were in school. Why is it not working now?

Matthew: The phones, there's just no need. The school rules should be they have to be off when you're on campus.

Nat: It's just because when you're on a phone you're actually focused outward, not inward, out of the school community most likely. Or even if you were, if I were talking to you, texting to you, and you were just down the hallway from me, there's still something antisocial about that behavior. Is that kind of behind this idea of not having cellphones in schools?

Matthew: Yeah. One of the titles that I've been bouncing around for the book is Be Here, Not There. A lot of it is kind of based on Ram Dass' book, Be Here Now, which was one of the kind of first books that brought Eastern ideology to the West and said be here now or be present, be present in your mind, present in your body, present in your space. The second you open up a phone there's something about the mobility of the phone that makes it even more cravable to be elsewhere. It's like this little time machine that doesn't really physically take you anywhere, but in your mind you can be taken on the journey. You can escape any reality just by typing something into the search.

Matthew: By teaching kids to be present, that's where then they're allowed to learn, and then that learning is where the connections start to happen in the brain and then

the brain starts to grow. When we don't have that space, and there's a constant short-term attention span, they're never going to learn much because their brains aren't given the opportunity to configure itself. It's like trying to install software and canceling it constantly when it's halfway through. It's never going to install, and it's going to continue to give you errors.

Matthew: We just have to get more aware. Phones should not be there. Space should be really thought through. Spaces. This is something that when I was teaching at Crossroads, the founder of Crossroads was a huge proponent of not sitting in rows. Ironically, he came from Harvard school, which is where our roots are. Harvard was a very traditional school, and it was kind of based in this very parochial model where the preacher or the teacher stood in front. All the students sat in rows. And they obeyed their daily schedule based on bells, which were just like the factory. You'd have the bell to go in, bell to go out. Then they broke that out, and then they started sitting in circles. That changes the dynamic because then kids aren't just sort of looking at the back of some other kid's head but then they're forced to make eye contact.

Matthew: The space needs to be thought out. If you're really going to create an innovative learning space, it's not just throw technology at them, it is create spaces. And then those spaces also have to have heavy duty technology spaces, which are like computer labs or maker spaces. Then they have to have little light computer labs, which are mobile, and that's where they can do their word processing and that kind of stuff. Then there needs to be space that has none of that. We talk a lot about I have a yoga and meditation retreat business.

Nat: Tell me about that.

Matthew: It's called The Reboot. It's a digital detox retreat business. People come in and whether it's an evening retreat, a full day retreat or a multi day retreat, they check in their device. That's the first step. Then they spend the entire retreat reflecting on why they need it, why they want it, why they don't have it, why they don't want it. We give them some of the physical remedies to technology, and then we give it back. Then they have this whole different experience, different relationship with the device.

Matthew: When you connect on a human level and hearts are connecting versus the heart on Instagram, it changes your consciousness. I just think we need a lot more of that and a lot less... a lot more here and a lot less there.

Nat: Matt, that's wonderful. I hope you're able to build that school someday because we all need that present, that sense of presence, and that intentional use of technology, the transformative use of technology, not the additive use of it. My last question actually for you is actually if you could just share... You've been an educational technologist for 20 years plus. What's your journey been like? Start at the beginning. What were you really a proponent of? What were you really excited about back in the early 2000s and then late 20th century? How has that evolved to where you are today? Because you're fascinating. I mean, this is... You're somebody who's so incredibly well versed in technology and its use in education and teaching and learning and just growth, yet you're also skeptical. This conversation has been about the skepticism that you have and just the questions that you have.

Nat: How those questions arose, what your journeys been, and we'll just let you go and conclude from there.

Matthew: I gave a talk in 2008, I believe, about the history of technology and how that informs where we are today. When you walk backwards from 2008, which is sort of the date when iPhone came out, and the iPhone was the precursor to the iPad. All of that stuff, it was the first time we had one device that could do all of these things, which is shoot video, watch video, edit video, write, read, compute, and all of the technology that we had in schools was one of those things was a different device. We had calculators, we had video cameras, we had video editors, we had microphones. We had all of these things except they were all separate pieces of technology.

Matthew: Then all of that got squeezed into that one thing. And that's the moment, it's ironic that it was a slate or it was a piece of glass because on the timeline that's what I call the plateau. That started to hit in 2008 was the time that we had HD video in our hand, and we could share it, shoot it, read it, watch it, do all of those things with that one device. We treated it like it was a Swiss Army knife. In schools we're like, "Oh, my goodness, this is amazing. This device can do everything." But, today, if you're going to open a restaurant, you're not going to give your chefs Swiss Army knives because it has a knife and a fork on it. No, you're going to give them a proper kitchen knife, which is going to do that job perfectly well.

Matthew: The idea that we have to have one device that does all the things is very short sighted because you need a good knife to make a good sandwich. Yeah, I can do it with a Swiss Army knife, and when I go camping I'd do it, and I'd hate it every time. So don't tell me that I have to use that one device because we're squeezing everything in one. What I've observed through that time... Before that it was kind of people were really figuring it out. The big thing has always been a prominent theme is fear. Fear has always been the driver whether it's politically, whether it's worrying about not being as sophisticated as that other school so we have to make sure that we have top of the line everything. What is that fear response? Who cares if you have Macs at one school and Chromebooks at the other. They're all using Google Docs.

Matthew: One has a \$1,200 interface and the other has a \$200 interface. So who's really smarter there? Some are driven by the fear of being seen as inadequate, the fear of not having a Cadillac in your driveway because the guy next... It's like that keeping up with the Joneses thing is real and fear is the driver.

Matthew: Schools have always been driven by fear. In 2008 until about 2012, that's kind of the early days of social media. Facebook was born in about 2006. YouTube was born in 2004.

Nat: When was MySpace born?

Matthew: 2004. But it died soon after that too. [inaudible 00:36:59]. What happened is we didn't pay attention, and we see the effects it's already had on our elections because nobody was paying attention. Social media has just grown like this parasite, and we've all fueled it. We've given them all the data they need to know.

They know that I love to look at these kind of videos, and I hate to look at these kind of videos, and I will engage with these kind of videos. That whole thing has just been this massive manipulation of humanity by understanding our most primitive data sources.

Matthew: So 2008 was sort of that plateau. Then 2014 to 2016 is when things started to go bad, and that is the time when everything hit a head. Every kid had... Students were really starting to have phones, and then earlier than that kids were starting to have social networks. It was that time when kids had phones and social networks because what phones do is they immediately give you this whole private life. You need your thumbprint to access your data. Remember the days when you'd have a diary and you'd have a key and a lock, and you felt like that was somehow private, but your mom somehow figured out how to do it, and she could check in on what's going on?

Nat: It's called a paperclip.

Matthew: They're not doing that with technology. They're just being allowed to run free and just kind of have these completely rabbit hole lives that their parents are not a part of. The parents aren't there to be supportive of it. My journey has gone all the way through until it was 2011 and 2012 when Apple and all these other companies were really getting aggressive marketing one to one laptop and one to one iPad programs. They called it one to one. They said, "Hey, this is... Every one kid needs one device whether the school needs to buy them or they buy them themselves, you have to. Everyone is doing it."

Matthew: Now, schools are basically... LAUSD spent a billion dollars on that bad idea, and they realized there was a lot of corporate forces that made it really corrupt. We just have to be really independent in the way that we program our learning for kids and be experiential and quit thinking that we have to keep up with the school down the street because none of these schools are doing it right. Really, the goal is to create happy humans, happy humans who can think critically and contribute positively to the world and have a lot of empathy.

Matthew: If the schools has not designed that, and the use of technology is not taking advantage of that or encouraging that, we're failing. We can see what's happening in the world. The world is not happy. Shootings are happening all the time because people are starting to become indoctrinated negatively online because there's something satisfying about that negatively. They want to have a... They want to mutually hate the same thing. When people all hate the same thing, they start to connect.

Nat: Yeah. They start feeling this false sense of belonging.

Matthew: I think schools have to become... They have to set goals, and you can't measure this stuff. That's the problem. You can't say, "Oh, our kids got average 1,400 or more on the empathy SATs." There is nothing like that. You have to just continually create opportunities for your kids to be of service to the world. Let technology be the guard there. Right now, the Bahamas are totally destroyed. There are ways that kids using Google Maps and other GPS data that they can start to contribute and help organize those people on the ground. That would be

a huge opportunity to teach citizenship, digital citizenship, and a way to communicate effectively with the world and create positive change.

Matthew: Instead our kids are like, "You know, hey, I can't believe so and so's going to be on campus. We need to protest that." They're starting to squash free speech. They're starting to avoid tough conversations instead of going forward to uncomfortable conversations. We just need to encourage all of this sort of happiness. I really think the happiest that I've experienced, the happiest I've seen people experience especially in workshop environments is just when humans connect. Schools just need to have more manufactured opportunities for just connection whether it's just having a silent circle, just doing intimacy workshops, letting kids feel comfortable being vulnerable and not creating these fake versions of themselves that they keep putting forward because they can, and they can actually quantify the success of it.

Matthew: A young girl can quantify how much more engagement she gets when she's in a bathing suit in a photo versus when she's in her school uniform. So she's going to start craving the response she gets from that bathing suit without the awareness of who she's appealing to. Three hundred people like you in a bathing suit, and you're 16? If that was in real life, she'd be freaked out.

Nat: Absolutely.

Matthew: In social media, she feels like she needs 500. There's a lot of where we've landed is freaking me out. In 2008, I thought technology was going to save the world. The first sentence of the book in which it started at that point was this should be the last book written about education because I thought from that point forward all books would be digital. Now, most digital books are just additive books, so they take the print book and they make it a digital book, and then they distribute it on a screen versus paper.

Matthew: If it's going to truly be an Ebook, it has to be interactive for it to be transformative. But now I know that personally I read better on books. The screen brings too many distractions.

Nat: Science backs up the fact that reading off paper and being able to annotate with a pen if you're so inclined helps you to retain a lot better than reading off of a screen. There's so much that is different about the organic versus the technological, I guess. But this conversation... I'm going to have to wrap it up for the sake of the podcast length, but this conversation has been transformative in so many ways, Matt. I'd love to have you back at some point to talk about a subtopic from this conversation because we need to continually press on this that schools are... They can be prisons or havens. And they can be crazy and chaotic and driven by the [inaudible] and the dopamine rushes and just kind of funnel that classified rapid kind of rush of a hallway or they can provide spaces for reflection and spaces for connection, empathy growth, understanding.

Nat: You get the Trump supporter and you get the far leaning socialist democrat to be able to talk with each other, it's a safe space to grow. And we're not seeing enough of that because everything that you've been talking about is to the point where it's too easy to obfuscate, it's too easy to find your tribe, it's too easy to...

These are developing minds that we're working with in schools. I'm hoping that there are school leaders who have been listening to this and watching this podcast. I'm hoping there are teachers who feel a sense of connection to your message, and I hope that there are parents who are listening to this as well and finding a sense of understanding and a sense of hope actually because, wow, what Matthew is saying here I've been thinking for years, and you're giving voice, I think.

Nat: Just getting back to the Wall Street Journal article to what parents, teachers have been really feeling but maybe have not been able to have the outlet to share through words. I'm going to leave you with the last point before we wrap it up.

Matthew: That totally just made me think of an exercise. We always think about how do we teach empathy. I'm wondering if you were to model separation, what would that look like. If you had one student who's a Trump supporter, one student who's not, and you model the way that interaction is happening globally, they would be sitting next to each other on screens not talking to each other and hating each other online. If we take that as the model, and then we flip it, and we say, "How do we teach the opposite?" The answer starts with move the screen out of the separation. Let the screen not be the wall dividing us. Let them look in the eye and tell me why you hate me. Then all of a sudden, "I don't hate you," or "We're the same."

Nat: You're a real person.

Matthew: Whoa. You're warm like me.

Nat: That's flesh and skin. Exactly.

Matthew: And so that is simply... That's the simplest, simplest explanation of what we need to be doing more of, more here, less there.

Nat: Thank you, Matthew Arnold, Director of Educational Technology for over two decades has witnessed an incredible run. I'm so glad there are voices like you out there for the future as we continue to wrestle with and integrate technology in meaningful ways. Thank you.