



Jake 00:16

Thank you, Anna, for coming on the podcast and joining me today it's a pleasure to speak with you. You are the author of recently released book called The learning game. And you're a teacher or former teacher turned entrepreneur, as you've said, and Chief Evangelist at the synthesis school, also writing a newsletter called fab Fridays on education and published over 100 issues on substack. For that, so basically all things, education and teaching, you're the go to person and it's great to be able to talk with you about it. I think education is a large interest in mine and curious what the future holds for it. So looking forward to jumping in, but I think the best place to start would maybe be with your education, I understand pretty unique, you went to 10 different schools and several different countries and sort of moved around a lot as a kid. So maybe that'd be a nice place to start to talk a little bit about your sort of unusual education. And maybe what some of the highlights were from that and maybe some of the downfalls.

Ana Lorena Fabrega 01:10

Yeah. Thank you for having me, Jake. So like you mentioned, I had a pretty crazy childhood moving around, I was 10 times the new girl. I'm from Panama originally, but because of my dad's job, we had to move around a lot. And so yeah, by the time I was 14, I had been to 10 different schools and seven different countries. And so I kind of had to pick up on what in my book, I call it the game of school in order to survive all the different academic environments and social expectations. And so the game of school is sort of the kind of things you had to do or I had to do, in order to pass to the next grade level appear as if I was paying attention, how many times I had to raise my hand to get that participation, creating the things I had to ask or not ask so that I wouldn't, I'm not getting trouble, how to please my teachers how to complete worksheets, and pass the test at cetera, et cetera. And I became really good at this game, right, I played it over and over and over again until I graduated high school, but I didn't quite like it. And I would argue without, you know, looking back, I realized that I wasn't quite really learning. And what I was actually learning was when I would get this kind of like school game out of the way, and then I could go outside and do the things that I actually enjoyed, and follow my curiosity and explore and play around without



anybody sort of judging me with a grade or telling me what to do, or how to, you know, giving me instructions. And so that's where, you know, genuine learning was happening for me, and what got me really excited. And so I was very lucky to have a mom that was very hands on and very involved. And she kind of let me take my interest wherever I want it. And so I had a, I had a really nice childhood. And that sort of became a springboard for me wanting to become a teacher. Later on. I love talking to people, I love learning about new things, and new people and languages and explaining it to others in ways that are exciting and compelling. And so I wanted to work with kids and I became a teacher. And when I was going through the EdD program, I started at NYU, childhood education and special education and psychology, I got to student teach at several schools, it's part of the the teaching training program, you have to observe for over 200 hours, kids in different placements with the objective to sort of like pick up on the things that you want to imitate from teachers, the things that you want to do different, but I was just really laser focused on the students that I was observing, regardless of the school, the grade, or you know, the demographic, they all seem to be playing this game of school that I was very familiar with, right. And I hadn't quite realized that it was universal. And so the kids were sort of following all the motions and checking all the boxes in order to appear as if they were learning but when you actually saw what they were doing, they were not really interested on the lessons or the pace that things were, you know, sort of presented, they were playing in their desks, they were, you know, daydreaming, and it was it kind of hit me, because I realized that, again, the game was universal, and that it did not quite transfer to the game of life, which is the game that we should be preparing kids for. And so I started to sort of that was the first time that I started, you know, questioning a few things that we were doing in the education system and wondering, you know, how is it that we ended up here? And why is it that students are doing, you know, like, why are they falling out of love with learning, when it's something that humans are born with this natural instinct to want to learn with this curiosity and this desire to explore. And so I started questioning a lot of these things, but I was like, you know, I'm gonna try to do things differently in my classroom. And so I went on and became a teacher. And to a certain extent, I was able to do that. And I created an environment that was inviting my kids wanted to



come to school every day, I tried to deviate from the curriculum as much as I could, in order to focus on the things that they were interested in and that they were already curious about, and that sort of had practical applications and well All events to them. But I couldn't do it as much right? Like, there were still so many parameters and standards and structures that I had to follow. And so what I started to notice was that as my students would move on to different grades, even when they have great teachers, they would start to fall out of love with learning again, and they would start playing the game of life, right, or the learning game, and start playing the game of school again. And so again, I started to question everything. And I started to dig into the history of education. And again, a lot of this things that we the way we do things now. And it turns out that, you know, like, like, I was saying, kids have this desire, and they're born with this natural instinct to learn, but then we put them into this buildings in this very structured places where suddenly, they have no choices over their learning over the way things are presented over the pace over the way they are assessed, to see what they learned. And suddenly, all these things that come naturally to you are enforced. And so naturally, kids start to fall out of love with that, right. And, you know, the things that they would do naturally, like asking tons of questions, you know, when kids are young, they, they they're questioning everything, because they're trying to deconstruct the world and what's thrown at them, and they're trying to think for themselves, right? Suddenly, they get penalized for this, right? Like, don't ask too many questions, you get in trouble for that, or, you know, when they're young, they want to try things out, and they take risks, and they fail, or they break things, or they make mistakes, and they don't really care, right? Because they're not being judged. But then they're put into this environment where suddenly there's a greed, right, and there's like, all this stigma around getting things wrong and saying, I don't know. And so I started to realize it's gonna be really hard to change things from within and for an individual to make things move in a different direction. And so eventually, I made the hard decision to leave the system in search for better opportunities. And so now, I've been working in the alternative education space for the past four years, and you know, do lots of research and writing about my experience, as a student of 10 different schools, and you know, in different places,



and then as a teacher, and now with all the things that I've discovered, and now I'm in the kind of other side of the spectrum, right at the edge of innovation, I'm part of this startup called synthesis, like you mentioned, and we're trying different things out. And so I believe that yeah, definitely this different childhood that I had, provided that springboard for me wanting to transform the way we do teaching and learning nowadays.

Jake 07:29

Yeah, it's a really interesting story. And I know, you know, a lot of people go into teaching sort of, you know, they learn whatever they learned in school, and then they sort of are looking for a job, and they just kind of like fall into teaching or something like that. But for you, it's like, so clearly a part of your story and a part of your passion, from growing up with an extremely unique education. Sounds like your mother was sort of very invested in your education as well. And to go through the system, and realize, hey, you know, doing my best here, it's not your fault. It's not any teachers fault, necessarily. It's the system that's sort of designed for them to fail and to, you know, the teachers to burnout, it's a very difficult system. And it's sort of, you know, beyond repair, I think, at least from your assessment, and not of many others. And so we need to sort of develop a new system in parallel, and maybe the old system will sort of repair alongside that by sort of learning from it, but it's too much to just go for straight reform, you need that blank slate. And this is analogous, you know, listeners to my podcast are also into, you know, some sort of pretty frontier kind of technology type stuff like crypto and even like country building, or city building. And these are also based on the premise that, you know, the financial system is broken, or the way that we govern countries is broken. And the solution isn't necessarily to try to repair these old systems, but to build a new and start something new. And so I think it's, it's very exciting. And it makes a lot of sense, obviously, in the context of education, which is this sort of old and very broken system. So how did that system come to be in the first place? I know, you know, it's, it didn't just like sort of spring into this way, for no reason, the way it is the way that it is now, it sort of made sense at a certain point in time. So you know, what's this broken system? How, what's the origin story of how it got to where it is now?



Ana Lorena Fabrega 09:09

Yeah, so it's very interesting, because education actually used to be the job of parents and one on one tutors, and the churches back, you know, 200 years ago. But then that started to change in a region of Germany called Prussia. So at the time, the, the the nation had been defeated by Napoleon's army, and they had suffered this horrible loss. And so the nation, you know, the leaders of the nation were like, well, we need to do something so that this doesn't happen again. And so they decided, for the first time to sort of take charge to educate the youth in the population in order to have a very strong fighting force. And so that this didn't happen again. And so this is the first time that we see like the beginning of this modern education system that we have nowadays, of, you know, grouping kids by age into the centers, this extent In that school year, starting, you know, the day really early and innovating around three 4pm. And, you know, having subjects and having at the time, it was a squadron leader in front of the class, which was like the teacher imparting the knowledge and training the kids for this common purpose, and everyone would do the same thing at the same time and pace. And so this model worked really well in terms that, you know, Prussia built one of the strongest fighting forces in the world. And so the model spread across the globe like wildfire. And around the 1960s, after World War Two, and the industrial revolution, it kind of revealed a nation's manufacturing capacity and the need for that. And so the United States sort of led this next revolution in the history of education, the theme was standardization and efficiency. And the whole point sort of shifted from the whole point of education from training kids to be Army soldiers, to training managers for to run corporations and to work at the assembly line in factories. And so again, the US dominated because they were really good at, you know, the assembly line for other things like bullets and cars, and clothes and food. And so they were like, you know, what, why don't we do the same for education. And so it became even more standardized. And the whole process of, you know, grouping kids together and putting everyone through the same curriculum, and ringing bells every 45 minutes, and you know, anyone that didn't quite fit, the mold was labeled as defective. And so, um, you would maximize, you know, the, the output during the day in order to eliminate waste. So it really functioned like a factory. And again,



those were the needs back then. But fast forward to 2023. And very little has changed. So we continue to use the same process and the same methods and the same model. And yes, we've tweaked a few things. And we've added a little bit of technology and smartboards, over here, over there. But the outcome is pretty much the same. And it's a shame because nowadays, we need kids that are able to think for themselves kids that are problem solvers that are creative. And that's not the right and the proper environment in order to sort of provide the space and the resources for them to turn out that way. And so, throughout this conversation, you're gonna hear me talk about that a lot. And of course, I'm talking about I'm generalizing, right, I'm talking about the very traditional schools, which happens to be most but I'm very much aware that there are other alternative schools and schools that are have different approaches and different philosophies that are doing things differently. But I'm talking about like the the traditional education system, which happens to be very common across the globe, and even I that went to different countries and different schools, it looked pretty much the same. And so that's sort of like, what what I realized that was very hard. And there's a, I don't think the traditional school system is going to go anywhere, unfortunately, at last, at least, not in our lifetime, because it does have a very solid purpose, it works like a babysitting center, and a lot of parents do have to drop their kids off somewhere that's, quote, unquote, safe, because of course, that has been changing in the past years, unfortunately, especially in the US, but so I think that's not going to change. And there's a lot of bureaucracies and a lot of stakeholders and a lot of forces that make it really hard for it to go anywhere. And it's very resistant to change. And so and so I think that the the solution is going to be to build a parallel system, right, and to have more diversity of approaches, so that people can actually pick and choose how they want like a menu, right, and how you know, what works for them for their family. And it may look very different from one kid to the other, it may change over time as well. So I think that the answer is not like a one one new system, but rather like many different, we can call it systems or approaches or options so that people can kind of like, work around and design their own learning game for their families.

Jake 13:47



Yeah, and again, it actually comes back to sort of this like city building analogy that I mentioned earlier. One of the things that's made me so interested in that for so many years, beginning with like seasteading, the idea that we could build cities on the water that could sort of self govern is this concept of experimental governance, and the more small sovereign areas that you have, the more people can do things differently, and just the more choice anyone has for where they want to live, it's easier to move internationally these days, and you have all these different places, doing all these different things, you can pick your own accordingly. And I think in education, it makes a lot of sense, sort of, like experimental education in a way where people can go and create a school that does things this way, and maybe it's very outdoors focused. And then another one, maybe it's very sports focused, and other ones very painting focus, and I'm just sort of naming like, different domains, but of course, it could be organized by very different things than than just that as well. And then parents and, you know, hopefully, with, you know, the cooperation of their kids can choose, you know, sort of what works best for them and, you know, incrementally improve over the course of their education as well. So I think it makes a ton of sense. There's this story that I heard several years ago that kind of stuck with me. I don't know unfortunately, the name of it or the author, but it was about it was sort of analogizing you know, school to like, it's talking about a school for animals. And it was an analogy for, you know, the traditional schooling system today. And basically, it was like, you know, instead of math and history and English, the classes were like climbing and swimming, and, you know, flying. And so the funny part I don't really remember, like the full story, but the funny part was, like, you know, the monkey was really good at climbing, but like you couldn't do the flight, you failed flying class or whatever, because he had to take it. And you know, the fish was great, and swimming, but he couldn't do any of the other stuff, basically. And so I don't know how they came to this conclusion. But basically, like the eel was like the best student in the school, because it could somehow do all these different things. I don't know how many climbs or flies, but maybe there's some way that it gets around that. So I thought it was actually a really good analogy, because school basically rewards this like, well roundedness and gaming the system, like you said, and it actually doesn't incentivize people to go further and deeper into



the places where they're, you know, best suited and where their strengths lie, and where they can become sort of best in the world type people. So how do you think we can sort of get around that where the school is trying to output like you said, either this military person or this factory worker. And so clearly, we're not in that world that rewards that anymore. So clearly, it's beneficial to double and triple down on your strengths. So how do we sort of fix that problem? And particularly thing?

Ana Lorena Fabrega 16:18

Yeah, so that's so interesting. I think I've heard versions of that story. And it's so true. It's such a great analogy for what's happening. I think, I think a few things, one, the moment that we decided, and again, there was a purpose back then. But I think that there's a big repercussion when you try to grab again, a process that's so organic, and natural and so different for individual because we're all very different, right? And we mature at different paces. And we just absorb information differently. And we are interested in different things. And we know that curiosity is very important for the learning process and for things to stick. And so when you try to standardize a process, and make it, you know, school has, and I'm not saying that schools, not forever for anybody, no, I actually think that there are some signals certain students that that benefit from this structure and from the way that we teach in school and from, you know, lectures and this and that, but that happens to be like the minority, the minority, right, what happens with the rest of the, you know, like, the animals, like you said, that are not the CEO, like, what, what do you do with those, like, they're kind of stuck in a system where they're set up for failure, right. And what's really interesting and also sad at the same time, is that we make us believe that they're not good, or that they're not going to succeed, because we, you know, many of them happen to have strengths that are not highlighted or rewarded, or, you know, incentivized in the system. Right. And so I think that we spend so much time in school trying to remediate Kate's weaknesses based on this curriculum and the set of skills that we've determined that you know, have to happen by certain age, which by the way, when you actually look at the research, so much of it is like self constructed, like we made it up, right, there's no research to back up that, for example, kids need to be reading by age



seven, what research shows is that we all mature at different paces, and at different rates, and that some kids are ready to read pipe three, some kids are ready to read by 13. And when you force this process before they're ready, that's when you turn out with readers and with kids that don't want to read for pleasure anymore. And the same is for many subjects. And so I think that, you know, instead of remediating kids weaknesses, and focusing on that, and if they're not good at something, when we determined they're supposed to be ready putting this labels and, you know, then becomes a self fulfilling prophecy, and they believe they're not good at this, we should be doubling down on their strengths. And I don't think there's a perfect system out there. But I do like what, for example, Finland is doing, the way you know, they do that they focus on the kids strengths, like, first of all, kids don't start school until they're seven, right? Why? Because they understand that, you know, those first seven years are, you know, so important that kids are running around releasing energy playing, following their curiosities, exploring, because that's how they set the stage for lifelong learning, right? You are keeping keeping all that again, natural instincts that that kids have alive. And so before you put them into like, sort of a more structured environment, and then when once they do enter school, you notice that they, this whole notion of less is more, so they have less classes, less hours in the day in school, less homework, some, you know, most of the time, they don't even have homework, and so less subjects less time, you know, in classrooms, and the reason for that is because, you know, again, they really value this idea of kids know, and again, they naturally have this innate desire to learn. So it's about sort of providing them with the space and the tools and the resources and guide them with the right questions, so that they can actually conduct their own learning, right. And of course, there's a space for an adult, but it's a more passive sort of facilitator kind of role. And so, I really liked that. And I've seen that some schools around the, you know, around the country have been like trying to adopt some of those Finland approaches, and then kids early on, sort of when you will, you know, the teachers and the parents are sort of noticing what the kids are inclined to and good at and it can be sports, it can be music, it doesn't have to be like Anakin Demmick subject and if they're really good at something, then they'll let them pick that path. And they'll sort of like double down on that and make them



really, really good at that craft. And I think that that's excellent, because the difference is that kids are graduating from school, in, you know, places with, with systems like that knowing what they're good at, they're very passionate about it, because of course, you tend to like the things that you're really good at. And they kind of know, you know, what they want to spend the next few years doing, how they can contribute to the world. But if you look at the US, it's pretty much you know, the opposite. And I say the US but you know, also like Latin American where I'm from, it's they follow sort of the same structure. And kids are graduating from school with a bunch of academic junk that they don't even know how to apply, because a lot of it unfortunately, doesn't even have practical application nowadays, you know, two thirds of the kids going through school right now end up doing jobs that haven't been invented. And yet we continue to teach them from this, like, outdated, one size fits all curriculums, when you look at the knowledge that we're forcing them to memorize for tests, most of the time, it's not even applicable to any like, relevant job nowadays. So it's like, you know, what are we doing, and then we're like giving grades and this whole craziness around assessment. And so I think that a way, again, I don't think there's a way to fix the actual system. That's why I'm out you know, out of it, but a way to think about it is the way that Finland is doing it, which is, I think they're onto something which is, you know, let's sort of look at kids, and they're all really good at something. And so let's help them find, what navall Raava canned a rock calls, you know, their specific knowledge, right, the things that they enjoy doing, that they that feel like play to them, but look like work to others, you know, what unique value they bring to the world, and then make them really good at that, we also have to expose them to a variety of different you know, a range of different topics and subjects and this none, but in the right context. So if you look at the way we do it in school, we grab knowledge and we isolated into subjects, right and every 45 minutes will ring a bell, we ask kids to close their math notebook and open science and close science after 45 minutes and open literature. That's a really hard way to learn and for knowledge to stick because learning is interconnected, right? It's really hard for you, like kids need to be able to see how math fits in with science, and how science fits in with chemistry and look at all the things so a way better way to approach learning is through a project or through a problem, right?



You give them a problem. And they're going to need in order to solve that problem, or that project, different subjects and knowledge and tools and resources. And that's when you introduce those things, right? Because they suddenly like kids see the relevance and the application of what you're asking them to learn or what they need in order to solve the problem. And we knew that, in order for something to stick, kids need to know the relevance of what they're doing and how they're going to apply it. And knowledge decays really quickly, if we don't use in the next 14 days what we're learning, then we forget about it. And so they need to be able to grab this and put it into practice right away in order for them not to forget, right in order to actually be able to do something with that other than just to memorize it for the sake of memorizing. And so I guess we could start by, you know, forgetting about this idea of isolating things by subject and start to do more project based work, giving kids more free time to actually do what they naturally do, and just provide the space and the resources and the peers in the community in order for them to explore. I think that, you know, reading is super important, but giving kids you know, expose them to a literacy rich environment and read to them and give them books and let them give them choices. And you spoke about this at the beginning of the you know, it's super important for the learning process for kids to have autonomy and choices over what they're doing. And this is for adults, this is for kids, this is for anybody that wants to learn. And so giving them that as much as possible, I think is super important. And it's sort of the complete opposite of what we're doing in school. It's funny, because in my book, I include a quote that says, you know, kids nowadays have twice as many restrictions as incarcerated felons in school. And so you know, that's insane, right, we've removed sort of, like the, the basis of, or one of the most important things in order for learning to actually happen. And so I think a lot of these things, come back to, you know, we need to, we need to rethink from first principles, what it means to teach and learn, you know, and we need to start asking, you know, the right questions like, what do we know about kids and how they learn? What do we know about the kind of future that they're going to be heading towards? Like, what are the skills that they're going to need, regardless of what profession they want to go into, or, you know, in order to be happy individuals in a world that's chaotic and constantly changing, and you know, considering that we don't know



what they're going to need in the future? What kind of jobs are going to be out there? And we know that information is accessible, right? So they don't have to be memorizing all this stuff anymore. And so and just to teach them how to think critically right, and how to ask the right questions, and not blindly believe everything that we tell them and not think that you know, authority has all the answers and they're always right, but actually no, teaching them how to be skeptics and how to you know, you know, detect biases, starting with their own and question everything. I think that that's such an important thing that we could all you know, and that starts at home But I guess those are some general ways that I think that we could start to make things move in a different direction.

Jake 25:06

Yeah, I think that's a great framework for thinking about it. And I want to sort of transition from, you know, talking about the problem to talking a little bit more about solutions. But one more, maybe a question before, before we do that, and and talking about synthesis, of course, is part of that solution, hopefully. But, you know, you mentioned in the book, sort of these dangerous lessons that are learned in school and these things that are sort of necessary to unlearn for kids. You hinted at sort of the problematic nature of assessments and testing and everything like that, and, you know, not really basically punishing failure during the time in your kid's life, where it's like, the least consequential to fail, and obviously, a critical skill for life to learn how to fail and get back up and everything like that. So, you know, sort of summarizing everything that we've been over thus far, what are like the most sort of the worst parts of the current system, the most essential that we sort of get right, and in creating this parallel system?

Ana Lorena Fabrega 25:59

Yeah, so Well, the one that we've just touched upon most recently was the one that you know, the system teaches you not to question authority. And I think that that's the first one, you know, when we ask questions, we innovate and we move things in the right direction. When we don't ask questions. We're stuck with the status quo. And I think that, you know, that's, that's the first one that I would encourage parents to start helping their kids on learn, like, it's



okay to question things. The second one is, this whole notion of trying to fit in like school teaches you to sort of fit into this mold and do what everyone's doing. And if everyone believes an idea is true, then it must be true. And sort of like this is the path to success, and, and so on, and so forth. And I think that no, like, we need to unlearn that and teach kids that it's better to stand out, it's better to, you know, find, you know, try to look at things from a different angle, not what everyone else is looking at, or what everyone else is thinking and trying to, again, it comes from asking questions, but really sort of carving their own path and breaking from the, you know, from the pack, I think that's super important. And again, something that we need to reinforce at home, because schools is teaching them the opposite, this whole notion of failure that you've very much touched upon. And besides, you know, school teaches you to fear making mistakes, how every time you get something wrong, which inevitably is going to happen, because it's the moment in your life where you're learning the most, right, and, you know, we punish them with a grade that then you know, hunts them into records until they go to college. And so they stressed about it. And so, two things are happening. One, we're creating kids that are risk averse, that don't want to take risks, because it implicitly states that they may fail. And if they fail, they know they get punished. And there's a whole negative connotation around that. So they don't even want to fix their mistakes or look at their mistakes. So they're not learning from their mistakes. And we know that in order to succeed and be happy in the real world, you need to learn how to deal with failure with adversity, when things don't go your way. And for that kids need practice, they need plenty of practice. And in order for them to get practice, when you reframe the way that we talk about mistakes, and we talk about failure, and we need to give them the space to do it in a constructive way. And in a way that encourages them to want to keep going and stand up and try again, right. And this is a huge one and one that I talk about a lot because I think that that changing framing is everything right? And we'll talk about how we do it at synthesis. But one of my favorite things there is that kids look at something that they've never seen before. And instead of being sort of like scared or or taking a step back, they're like, oh, I don't I know nothing about this. But I'm totally like, I have what it takes to figure it out, I can figure it out. And that whole notion of like that desire to figure



things out and knowing that you can, it's something that's not taught in school, and that we need to cultivate at home or something that needs to be unlearned, in order to relearn the right thing. I guess. I also talked about this idea of, well, following instructions, right in school, everything's so scripted. And we're under this belief that kids you know, don't want to be challenged when in reality is something that I've learned from working with kids. And something that game designers, by the way understand really well is that kids crave challenges, like they actually want the real thing. And they want to, you know, be part of the decisions. And even if there are consequences, they want to shoulder those consequences. But again, we kind of water things down in school, and we give them all this instructions, and there's always a right answer. And the teacher always know that it's like a skewed way of thinking about learning, right. And so again, we train them out of something that that they naturally had, was, which was this desire to figure things out. And suddenly, like, you know, we're training them to just sit down and wait for somebody to tell them what to do. And you know, the real world doesn't reward that the real world wants people that are, you know, proactive, and that can can figure things out and nobody wants to hire someone that needs to be told what to do all the time. And so I see so many kids graduating from school, you know, very insecure with their abilities to Yeah, like figure things out when they're no instruction. So that's also a big one. And I think the rest we kind of covered already throughout this conversation, but if anything else comes to mind, I'll bring it up.

Jake 29:58

I know that's super over Are arcing, especially combined with all the stuff we've already discussed. I think it's very clear what's wrong with the system. And hopefully, we can move forward to talking about some solutions. And I would highlight actually, the first, the very first one that you raised there was about sort of, you know, giving giving kids permission and teaching him it's okay to like, sort of question authority. And not everyone knows, like, all the answers and everything like that, I always consider myself like, very fortunate that, you know, growing up, I never really got that, or at least very rarely got that classic parent answer of like, you know, you're questioning why something is the way it is. And they just say, like,



it will just is, or that's just right, or you just have to do it or whatever. Like, I always, you know, my poor parents, but they always like, sort of tried to give me an explanation. And so that was, I think, a very beneficial way to grow up where you're not just sort of learning things or the way they are, because they are, and you're actually sort of getting the opportunity to think things through and, and learn things and realize that, you know, the parents and the teachers don't always have all the answers, which is super helpful. I think. So, transitioning over to solutions, like I said, I think, you know, obviously, we'll spend some time on synthesis. But one sort of maybe meta question before we get into synthesis is around sort of existing solutions, sort of, like you mentioned with, with, you know, Finland as like an interesting alternative, are there other things that other countries are doing or even, you know, schools in America or elsewhere, or even just sort of alternative forms of education that are somewhere else on the spectrum, whether it's like, you know, you know, homeschooling or Montessori or anything, that sort of untraditional that maybe each of these options isn't necessarily perfect for everyone. And like we said, there's probably not gonna be a one size solution fits all, you know, thing anyway. But at the end of the day, like these pieces might have, or these different sorts of alternatives might have different pieces that might be sort of more useful or interesting. So I'm curious what stands out from your perspective?

Ana Lorena Fabrega 31:51

Yeah, absolutely. So the way that I now sleep so before I did all this research, and when I was stuck in this system, I thought that the the two alternatives were the traditional school system, or homeschooling? Well, it turns out that there's a whole spectrum of options, right? So if you have all the way to the left that very, very traditional school system, then all the way to the right, you actually have something called unschooling, right, which is not even homeschooling, it's just like the, when families make the decision that their kids are just going to be, you know, unschooled, and they're just going to learn from whatever it is that they want, they want 100% direct their own learning, and everyday is just like, wherever, whatever kids want to do that day. And so that's an extreme, just like the other ones in extreme, and it may work for some people. You know, I don't think that



would work for my family, for example, because personally, I do see the role of an adult, and especially like a mentor in a child's especially as they're growing up, I don't think that they necessarily have all the answers of where they want to take their learning. I think it should be, again, like a facilitator, mentor guidance kind of approach. But I do feel like it's very important, that parent and adult figure and so then you have, you know, sort of like world schooling, right, which are the families that decide to just travel the world and then have their kids sort of, like learn from whatever it is that they encounter, but it is a bit more guided, because the parents are sort of part of it as well. And I think that's fabulous, if that's sort of like your lifestyle, and then you have homeschooling, which has so many different variants, right, you can have like homeschooling, that actually looks pretty much like a traditional school system, because parents decide to do, you know, grab a curriculum that they would use in school and follow it to the door, and they have a schedule, you know, eight to three, eight to four, just the way you would have in school. But then you have more flexible approaches, you have some that involve a lot of online learning. And this is very common for families like that are, you know, in the sports world that have to travel a lot. And so usually the this online is homeschooling method is very popular there. But then you also have one that I really personally like, and I would consider something like this for my kids when they're older, which is sort of the idea of learning pods, or micro schools, which is something that became really popular with the pandemic and COVID. And when you have like a few kids like six to eight kids grouped together, it could be in a home, or it can be in you know, in different places, but it's sort of like an unconventional it's not like a school setting. And the the curriculum is very flexible, right, you kind of pick and choose on. It's very project based, and it's based on the kids interest. And you got Yeah, you kind of like go by what they're curious about at the moment. And it's very, like, you know, let's, let's work on this theme first, and then you move on, and you kind of have a saying over it. And I really liked that approach. Then you have something that I also find fascinating and that I would also consider for my kids a few times a week, which are the four schools and the beach schools, right? Which I think go very much in line with what we know about kids and how they develop. If you if you look at what kids



need in order to develop like healthy individuals, they need tons of movement, they need to be releasing energy from the moment they wake up until they like go to bed right they need to get exhausted throughout the day from moving so much. And if you look at what we've done with the traditional school system Every day it gets even more structured. And kids nowadays have you know, many schools have like 15 minutes of recess. And you know, maybe like the hour of PE, that's not nearly enough movement of you know what they need, right. So you start to see abnormal quote unquote behaviors where they're like shaking and bouncing and fidgeting. And then teachers make them feel bad for this behaviors, when in reality is an indication that they're not getting enough movement throughout the day. And you know, that's another conversation, but then you start to see all the labels and the ADHD, and now we need to medicate them when in reality, I would argue that most of these kids don't have ADHD, what they have is that they're put into an abnormal environment that doesn't go with what we know about kids and what they need to develop, as, you know, healthy individuals. And so this beach schools and forest schools, kids are outside in nature running around around other kids that have guides and adults with them. And they're kind of learning from the things that they encounter in nature. And there's some variations of this summer are like a little bit more instructional, and some are a bit more like free exploration. Either way, I think that's something like that is super beneficial, especially those like first eight years of their lives, right, where they should be outside playing and running around with other kids and just exploring the things that this awesome world has to like, show them. And so something like that is also very interesting. And I think they're on to the right place. And then you have and here's where I'm going to talk a little bit about synthesis that this whole online component. And it's interesting, because when people think about online education, many people think, oh, what we saw during the pandemic, and you know, that's not real online education would happen, there was like, from one day to another, you know, we had this like, pandemic and people had to survive. And so schools tried the best they could, they grabbed exactly what they were doing in the brick and mortar schools, and they put them online. And so, you know, if kids were not paying attention, and not interested in school, in front of the teachers and classmates, how is it that they're going to pay attention in front of a screen for hours a day,



of course, that did not work. And of course, kids were like, losing their mind, and then falling behind, blah, blah, blah. And so that's not real online learning, like online learning, Dawn, right, which is the kind of, you know, alternative that I really like, is when it's designed with an audience, like an online audience in mind, right. So you try to optimize for time and for, you know, effectiveness in order to, you know, spend the least amount of time in front of a computer, but make it as you know, the most effective you can and then leveraging technology so that you can deliver the content in an engaging way, and in a way that actually sticks. And so perhaps real online learning when you ask me, and so I do like a lot of approaches that are using this, and I think that, you know, the future of education looks, you know, this is going to be a big part of it, especially with all this like aI tutors that are coming out that I think we're onto something right trying to cover the hardcore academics that kids need to be exposed to, in a very effective way, a few hours a day, so that then they have the rest of the day to engage in the kind of alternatives that I just talked about, or engage in sports or you know, in in, you know, music or, you know, go to for schools or project based learning or in enrolling things like problem team problem solving, which I think is huge. And such a fundamental skill that every single kid needs, regardless of what profession they want to go into, like, if there's something we know about the world they're going to inherit is that they're gonna have to work with other people, probably from different places across the globe, in collaboration and probably compete against, you know, other things, right. And so, at synthesis, one of the products that we have is, we give kids extensive experience in practice working in teams, solving really challenging problems that are fast paced, where they learn about trade offs and need to make decisions under pressure, and they're competing against others. And they're faced with, you know, failure, and they need to pick themselves up, you have to figure things out. So there's like a lot going on. But these are the kinds of soft skills that I believe are fundamental that we're not teaching in traditional schools that kids are going to need in the future. And I don't think synthesis is the only place where you can teach this. I do think right now is the best scenario where I've seen that kids get practice with this, and it's getting better every day. And so having been, you know, I think that should be part of every kid's education,



like some collaborative team problem solving. And so, yeah, so these are some of the things that we're seeing, and that I think are very interesting. You're also starting to see spaces emerge, where parents can drop their kids off throughout the day, because they have to go work, which is the problem that we were talking about earlier, that school serves as a babysitting center. So we're starting to see startups, there's one called moonrise where I invested that I think is a wonderful idea where you drop kids off anytime from 7am to 7pm. And around other kids, every kid is working on their own thing, but they have guides there's you know, food and there's like a library and the digital section with like iPads and virtual reality goggles. And so and there's like an outdoor playground and kids are there doing the wrong thing, but they're surrounded by peers, they have adults and it's like a very fun and beautiful place to drop your kids off. So something like that I think is going to become more and more common and you know, around your area, so that this alternatives become more and mainstream. Yeah, it's

Jake 40:02

a super helpful overview. And I'm learning a lot today. But I'm particularly interested in the pod based approach you mentioned, I think that sounds really interesting. It's sort of like this in between homeschooling and traditional schooling thing where they start with be with other kids. But the learning can be a little bit more self directed and autonomous and just more focused on each individual kid and what their strengths are and everything like that. So synthesis school, you know, it's an interesting story spun out of SpaceX, I think, I don't know when it spun out. But I think it was sort of originated, almost 10 years ago, I think, in 2014, sort of Elon directive, as I understand it, to sort of create this experimental school that was more focused on the things you mentioned, collaboration, problem solving, giving kids real complex issues to sort of communicate, and collaborate on. And sort of doing it was somewhat of like a game based approach. And, obviously, your book is called the learning game. And that could sort of easily sneak into the title without having that much of a relevance, but you actually focus very heavily on sort of the importance of games themselves in learning. And obviously, that's sort of the approach that synthesis took with, you know, their first product, I think it's now going by



synthesis teams, you've got synthesis tutor now as well, which is super interesting. But maybe you could sort of give a lay of the land on that, and, and why games are so important. I mean, you got at some of it, but how do you design a game that's particularly good for learning? Obviously, we're not talking about like, you know, Xbox random, you know, pick your game here, we're talking about something that's at least somewhat guided towards international education. So what makes a great educational game? And what have you guys seen sort of in the early days of synthesis that kind of works best?

Ana Lorena Fabrega 41:40

Yeah. So this is a very, yeah, very interesting question. And there's a lot to cover. So I'm going to try to sort of like touch upon the basics of it. But basically, like Elon very, you know, very clearly stated, you know, I don't need to force my kids to play games, that's something that they're naturally inclined to. So we need to be observing what it is about games that's so interesting, and how can we use that in order for kids to actually learn about, you know, things that they will need in the future. And what's what's so interesting about games is that kids get to have a lot of autonomy, which is something we talked about earlier, over, you know, the players and you know, the decisions that they want to make, and it's like, interesting, and it's usually, you know, very relevant to the real world, or it's something that they can see how they can have the same over, it's something that they can get progressively good at, if they keep playing, especially when you think about video games. And it teaches you, for example, when you see kids playing video games, they're constantly failing, right? And they pick themselves up, and they just keep going, or they try to figure out, okay, I failed again, what did I not do, right? What do I need to do different next time in order to get better, and they have this like perseverance to keep going until they achieve their goals. And you don't see this in traditional school, right? So Elan was like get rid of all the fluff and all those, you know, things that are not really relevant to learning, let's focus on the real thing, let's make it fun. It needs to feel like a game so that so that kids can, you know, want to keep doing it. And so there's I went down a rabbit hole, trying to like to see, you know, all the things that game designers do really well. And it turns out that there's this concept, for example, called flow,



where you, you know, you put players and you know, into this state where sort of like, everything freezes, and you're so focused on what you're doing, that you're like, absorbed in the experience. And there's some ways that you can actually replicate this in the real world. And again, so that kids feel the same way when it comes to their learning. And it's as simple as again, I'm highlighting the relevance of what they're learning, starting from their curiosity and giving them problems and things that they're interested in doing. And so again, choices autonomy over their learning and a way for them to feel competence. And it's super important for there to be clear, unambiguous feedback, so that they know what they need to do in order to improve in school, sometimes this is very unclear, like kids don't really understand what it is that they need to do next, in order to get better at that thing. So they immediately get discouraged. And they tune out and they don't want to keep going. So in games, it's really clear, you know, what are the next steps and what you need to do. And then it's so interesting, because it starts with this, like, idea that kids kids want a challenge, like we talked about eight, they crave that challenge, and they actually enjoy feeling a little bit of confusion. And this is something that games are really good. Like, it gets to a point where kids don't really know they encounter something that they don't really know where it fits, but but they're, you know, if they don't get it, right, they're not like big stakes, you know, they're not going to get the backway they're not going to you know, the game is over. And that's pretty much it, right? Like it doesn't really matter. And so that's actually really that framing is really important in the learning process. And so, the other thing that was super interesting that Elan did in this school and that and that you actually see a lot in the gaming world. It's like he was like, you know, forget about grade levels and forget about, you know, grouping kids by age because if you think about it, what in the real world do you only interact with people your age, right? The best way to learn and the most interesting way to learn is when you have older kids and younger kids and you know, the older kids want to teach the younger kids because it's Natural sort of like human impulse when you know a little bit more, and you kind of want to be the older kid and teach it to the younger ones. And then the younger ones, what happens when you sort of remove that grade level speed bump ride, they're able to accomplish and do so much more than you thought they were capable of



doing. They see, that's why when you look at brothers and sisters, like, you know, the younger siblings usually are more quote unquote, advanced or so parents think, right, but it's because they have an older sibling that they're trying to constantly imitate. And so they're able to do things that otherwise you know, they probably wouldn't have the opportunity. And so I think that this is also a common trend in games. And this was very popular in Ad Astra, which was the original school that Elan created with Josh, the founder, one of the founders of synthesis. And so it's this whole notion that if you make a game that that kids are, you know, they need to opt into the game, right. So if it's something that you're forcing them to do, then then that, that, you know, that whole motivation component starts to wind down. So they need to say I want to play that game I'm interested in, I want to do that they need to opt in. So that's also very important in terms of like the game aspects that work. And then there's this whole notion, you hear nowadays, this buzzword like Oh, gamification, and gamification bits, then, you know, schools are using gamified learning. But it turns out that a lot of is gamification is really point suffocation. So schools are grabbing sort of like the least interesting things about games and game design, and incorporating into the learning and calling gamified education. And it doesn't really work. Because these are things like points and badges and leaderboards, and characters, and, and colors, and this and that, all this, you're tapping into the extrinsic motivators. And what happens is at the beginning, they work and kids are super into it, right? You do this, or I'll give you a pizza party, you do this or you move up in the leaderboard, you get this points and data. But these are actually the least interesting part of games, right? Because the moment things get hard, which eventually they do, the math gets hard, or you know, the content gets harder. This extrinsic motivators are no longer enough to keep you going through the really hard part. And so the most important and last last, like long last longing, elements of games are actually the ones that tap into the intrinsic motivation, right? Again, you opt in into the game, he will understanding how you can get better having a challenge that's not too out of your comfort zone. But it's also not like too easy that then it becomes boring. So it's like finding that perfect sort of like zone of proximity that we often talk about, that's conducive to flow. And, and then yeah, just giving them a lot of autonomy and not making it easy, right making,



it's a challenge. And so these are like some of the things and in my book, what I do is I give, actually some more practical applications of things that you can do right away with your kids, in order to start to see the benefits and reap the benefits of all these gaming elements that are very conducive to learning in the real world.

Jake 47:54

Right. I think that's all I mean, very interesting, the origin story and the focus on gaming and everything like that. And then more recently, I think you guys have sort of added a second sort of main pillar to this new version of education or this new option for education, which is synthesis tutor superhuman AI, that I think you guys are starting with math, and eventually, you know, maybe some other things. But can you sort of introduce that a little bit? And then maybe, from a practical perspective, you know, as a parent, how do you think about incorporating synthesis, whether it's teams tutor both? And then alongside, you know, whether it's traditional schooling or one of the alternatives that you named? How can you start to weave all of this together into like, actually creating a sensible plan that obviously, like we talked about earlier, there's no one size fits all. But even just from your perspective, personally? How are some, you know, how do you think about sort of weaving that that mix together?

Ana Lorena Fabrega 48:47

Yeah, totally. So starting with the synthesis tool, which is sort of the second product that we've launched in order to target the hardcore academics, because with teams and the problems, collaborative problem solving games and simulations that we have, we're targeting the soft skills that we talked about that schools are not teaching and that everyone else like we believe every kid needs. But then what about the hardcore academics? If we really want to create an alternative system that sort of competes against the traditional system, we need to cover the hardcore academics? How do we cover them in an effective way we kids actually, are not learning for in order to pass a test, but they're learning in order to achieve understanding and it sticks with them. And how do we do it? You know, we consign it, like we do it in a shorter time span, so that they can have the rest of the day to enjoy childhood, right and restore through childhood and be kids. And so if you look at it on history, like the best way to teach and learn is



through one on one tutoring. That's, you know, Alexander the Great had Aristotle. And so that's how it was, that was the best way to do it. But of course, how is that even possible? You can't give a personal one on one tutor to every kid around the world. And that's sort of the holy grail of education technology, right? Like how do we leverage technology in order to give a digital tutor to every kid around the world and so they're very, the lot of startups that are working There's and there's some versions out there. What I really liked about the one that we're working on, is that, so it's it originally the technology greats, it's from this groundbreaking research from DARPA, they created, I think it was in 2006, in order to teach kids a group of, you know, groups of 18 years old it and what they noticed was that when they created this technology, and the kids that use this tutor back then in 16 weeks, they were able to outperform Navy SEAL experts that had been, you know, in the field for over 10 years. And so it was pretty incredible. At the beginning, they were like, this is way too good to be true, is it that we, you know, accidentally picked a whole group of 18 year olds that are geniuses. And no, it turns out that the way that the tutor was built, a was just really, really effective. A lot of tutorials out there to sort of take you, you know, from the middle of the pack, but ours is just significantly better, sort of like the difference between going to a community college and an Ivy League, right in terms of the results. And I'm not going to get into the whole, like, sigma two problem. But it's too technical. But basically, what we noticed was that when you grab, when I first heard about this product, I was like, I'm a little skeptical, because as a teacher, I understand the importance of the human element and the connection, that has to be part of the teaching and learning process, especially kids need to feel that there's a caring adult on the other side that wants for them to succeed and believes in their ability to learn and succeed. And so I was a little skeptical about how this was going to turn out. But the way that we've done it has totally blown my mind. Because what we did was we grabbed we started with math, like he very well said we plan to cover every academic subject. But starting with STEM, but what we did was we grabbed, we found this incredible math teacher called Dr. Kenton, who has a PhD in math from Princeton, he has written over 26 different books in math. He's part of the American Association of ambassadors in math. And so in addition to being a content expert, like in the field, he is great at the art of



teaching, right? He has an incredible stories that he weaves in, he understands how to introduce the you know, math in a sequence that makes sense. One of my biggest frustrations as a teacher was that I would see the sequence in curriculums and I was like, This doesn't make any sense. Like, how, how did we jump from here to here, like, it's so hard to make this connection, this is not going to work? And so the way that he does it, it's like through the sort of like the history of math, and it's so entertaining and the stories and the examples and the way he gives feedback. And we that encourages you to keep going and he doesn't give you the answers when you get things wrong. But he asks the right questions that make you sort of like probe into your thinking and make you realize and get to the answer. It's really incredible. When I met him, I was like, this is the teacher that I want for my son and you know, for kids all over the world. And so what we did was we recorded him for over 200 hours. And we were able to capture all the like his his persona into this AI, you know, machine, right. And it's incredible, because it's the stories, the jokes, the examples. And it's for the first time you have a teacher that's like, infinitely patient. And that's going to stay with you until you master the content. And so one of again, my biggest frustrations as a teacher was that I had 30 kids. And there was no possible way that I could sit down with every kid that came to third grade, for example, with all this, like gaps in knowledge from previous grades that I had to address in order for them to keep learning math as it got harder. But I couldn't sit with them until they grasp it because I had a whole class and a whole curriculum to keep going and kids that were more advanced. And I couldn't stop the class. But now and I was like how are we ever going to solve this now with this digital tutors, we were solving for that problem, right? Like, again, it stays with you until you master the content. And so I think it's really incredible. We're still in the early stages, but I think we're really onto something the kids believe they're working with Dr. tenten. They don't think it's an AI, you know, tutor. And so I think that's something like this is really exciting. And again, we don't have all these components that are points suffocation that I was talking about earlier. Like we don't have any the colors, the characters, the points, no, and the kids love it. And they're super motivated, and they're flying through the content, like we one of our biggest problems right now is that we can't create content fast enough



for the you know, the pace that the students are consuming it. And it's because they're finally understanding math, they can see, you know, learning this, how they can apply it right away, like, so it's like in a way that really sticks. And so that's the next part of the digital tutor. And now answering sort of like your, your your next part of the question, which is like how can we sort of incorporate this to products or, you know, synthesis or, you know, the alternatives that we've been talking about? I think that you know, right now our customers, our parents of kids that know that understand the problems with the traditional school system, but they're not necessarily in a position where they can pull their kids out of school, but they know that they their kids need to unlearn a lot of the lessons that are being reinforced in school and they have to learn the soft skills that we're teaching, you know, outside of school, right, because schools are not doing a good job teaching that and so they use it as an enrichment program. So kids, when they leave school, you know, a few to a few days a week they enroll. Fill in synthesis, and they can play and spin off this games with kids from all over the world. And they're problem solving. And they're enhancing their communication skills and learning mental models and how to make decisions. And they learn about trade offs, all that with teams. And with the digital tutor, their parents are sort of like also like testing it in order to see how effective it is to teach their kids math. And what we're starting to see is that even the attitude of kids who thought that they were not good at math, and they just have this like idea, like, I'm just not good at it. They're like, Oh, my God, I'm actually really good. And actually like math, and I'm starting to see the why I need math, right, which is something that we're like, would obviously know, so many kids don't understand why they need to learn math, because of the way that it's introduced in school. And so that's one way then we have customers that are actually homeschoolers, or unschoolers, or, you know, that are trying to make this part of their hardcore, you know, actual education. But again, we're not, we don't we're not there yet, in terms that we haven't covered all the subjects, we still have a lot of, you know, lessons, and we're working really hard to do that. And so, in the future, the way I see it is, in the US, for example, you have some states that are now like the school choice, right, where the government is actually giving them the money, and they get to choose how they want to spend that money in order to



educate their children. So it doesn't have to be like, you know, public school funding, right. And so we see that, you know, parents that are doing it, you know, in Florida, for example, is a school, you know, they have school choice. And so they're using that to pay for things like synthesis for paid things like learning pause, or online programs that they like, and so you kind of craft your own education based on, on what works, I think that something we need is parents need to understand, you know, what the alternatives are, I think it's not as clear like, it's not like, Oh, you decide you want to homeschool your kids or you want to try something different, there's not like a place that you go, and all these options are available for you. And you kind of pick and choose, you still have to do so much research and ask around and go online. And so I think that that's sort of a big opportunity, right to have like a like a hub, so that it's easy for parents to know what they can do. But But yeah, I think that right now it serves as a compliment in order to teach the things that they're not learning in school, eventually, we do plan to have the whole, you know, structure and everything so that it's going to be online, because again, we just want to make it very efficient, so that kids can be kids, right? That's like sort of like our main goal for them to be able to have the time to do the things that make them kids, right. And at the same time, be prepared to have any future they want to do. Like if they want to go to college, they're going to be able to go to college, if they want to then you know, join a traditional school, they're going to be able to do that, or they're not going to be behind, which is a big misconception that parents have when they think about oh, if I pull my kid out of school, and I try something different, like I'm taking a big risk. And I think that no, the big risk, you're taking it if you if traditional school is not working for your kid, and you continue to rely on that, and you don't do anything about it.

Jake 57:44

I think that's a great way to wrap up. I know we're up on time, but I really appreciate you taking the time, it's been a fascinating conversation. And I've frankly, never talked with anyone with nearly this degree of sort of knowledge and, you know, scope on education space. So it's been really interesting and very optimistic for you know, what the next 10 years hold both of the synthesis and this wide



range of other alternatives that you mentioned. So appreciate it. And where can people go, you know, who are interested in sort of following you and your journey and, you know, keeping tabs on all the updates and education. Where do you want to point people obviously, you go by the book on Amazon, it's called the learning game, anywhere else you want to send people?

Ana Lorena Fabrega 58:20

Yeah, so I'm on Twitter, I'm Ana Fabrega 11 on Instagram, I miss fab underscore Learning Lab. I also have a YouTube channel that I'm adding some videos to. And I have my newsletter that you mentioned at the beginning Feb Fridays, that I've kind of paused because have a 10 month old baby at home that I'm trying to juggle, but eventually the book, which is my second baby, but eventually I'm getting back to it where I share sort of like the best of what I'm finding for free just with the idea of you know, helping parents become aware of this alternatives. And, and, you know, my work is about asking lots of questions rather than giving like concrete prescribed answers, because I think it's different for everyone. It varies for everyone. And I think that the solution is diversity of approaches. And so thank you so much for having me, Jake. I really appreciate this conversation.