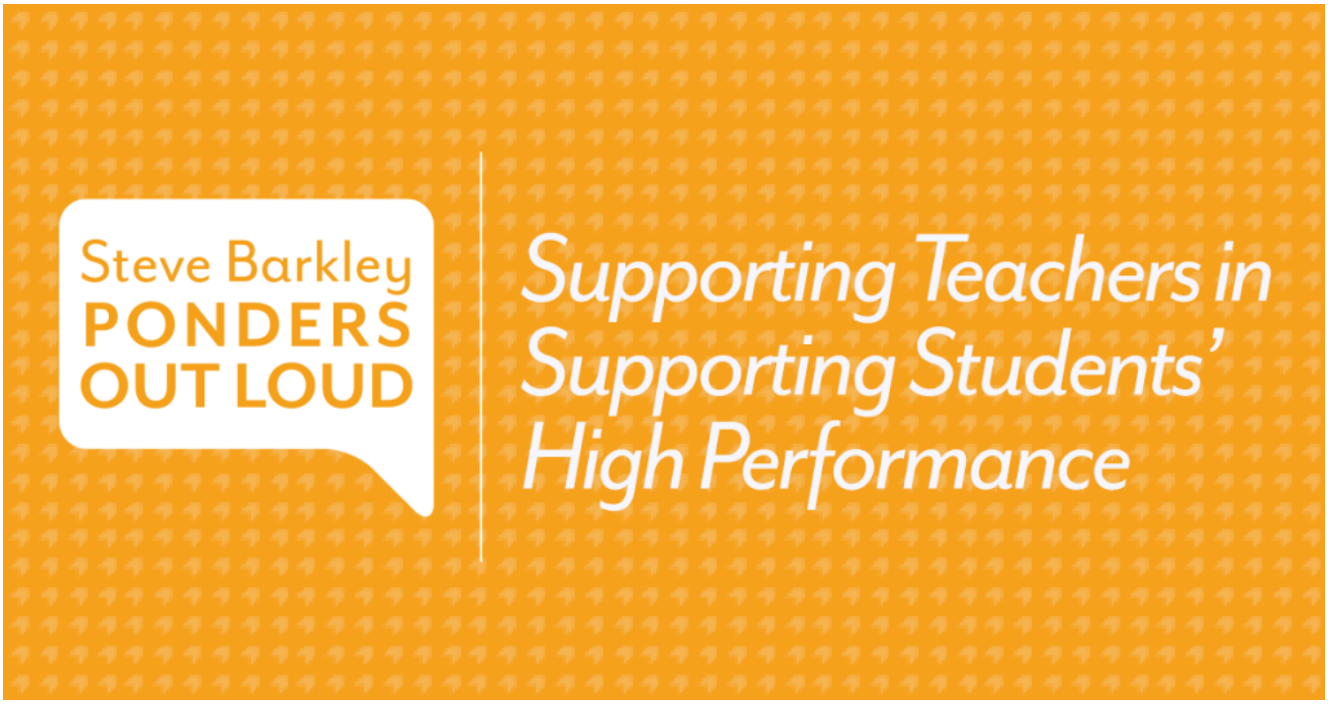
Podcast: Supporting Teachers in Supporting Students' High Performance



How do instructional coaches and instruction leaders support teachers in maximizing students' high performance? How should we be preparing teachers to identify possible indicators of high talent and to create opportunities for talent and giftedness to flourish? Steve Arnold, the Head of Gifted and Talented at GEMS Education explores these questions and identifies the importance of adaptive teaching verses siloed differentiation. What should teachers know about the neuroscience of learning?

Email Steve: steve.arnold@gemseducation.com

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Podcast Transcript:

[00:00:00.290] – Steve [Intro]

Welcome to the Steve Barkley Ponders Out Loud podcast. As instructional coaches and school leaders, you are tasked with guiding continuous teacher growth to create student success. This podcast looks to support you with strategies from experienced guests, as well as my own insights that I've gathered over the years. I'm thrilled to have you with us. Thanks for tuning in.

[00:00:29.960] – Steve

Supporting teachers and supporting students' high performance. Leading our podcast today is Steve Arnold. He serves as the corporate head of Gifted and Talented at GEMS Education, where he leads initiatives to identify and nurture exceptional abilities among students. Steve advocates for an inclusive and growth-oriented approach to gifted education, emphasizing the importance of recognizing and developing talent across all areas of schooling. Welcome, Steve, and thanks for joining us.

[00:01:02.670] – Steve Arnold

Thank you so much for having me.

[00:01:04.880] – Steve

I'm wondering if you'd kick off our conversation with a definition for the phrase gifted and talented.

[00:01:13.570] – Steve Arnold

Sure. This is where I get into dangerous territory immediately, because I'm about to potentially talk myself out of a job, because I think the word giftedness in particular is deeply problematic. And I think it comes from a historic view, where we really did have this opinion that certain individuals were born with something special that was always going to come out, that was always going to occur, and that they had this almost superhuman ability lying within them in a certain area. And it can seem like that. It certainly can look like that,

because, of course, what we see from the outside is only the outcome. So when we see a brilliant pianist, we only see the outcome. And when we see a brilliant athlete on the television, we only see the outcome. We don't see what's going on behind it. So we do have this view that, how come I can't do that, but they can? They must have something that I don't. And there probably is some genetic element to particularly some certain areas of high performance. It wouldn't have mattered if I had been born on a basketball court. I was never going to play in the NBA because I'm 5 foot 10, and I can't jump very high.

[00:02:33.660] – Steve Arnold

So there were certain things that were barriers in the way for me. But what's really interesting from an education perspective is that those genetic differences certainly do have an impact, certainly in physical pursuits. And there's no doubt that we are born with neurology, I guess, which leans towards one way or the other, leans you towards being good at certain things. However, particularly when it comes to cognitive pursuits, the evidence suggests that the genetic influence is probably less than 10%, probably much less than 10%. Meaning that actually, unless there's a specific barrier that exists, which, of course, sometimes there is, all of us have the ability to be high performing at something. And so when we talk about giftedness, what I actually think we're talking about is high performance or expertise or whatever other word you want to put in it. We're not talking about some mystical, magical power that we're born with to do something really well. You can look at examples from history, of course, we speak to both things. People often cite Mozart. See, I'm not very good musical composer. I think it's Mozart I'm talking about – now, he was a child prodigy, was he not?

[00:03:56.010] – Steve Arnold

I've read an awful a lot about his early life. I read this great piece about how he was composing these complicated

pieces at age eight. This writer said, yes, he was composing complicated pieces at age eight, but they weren't very good. He happened to also grow up in a house that was filled with musical instruments, and he had that environment. Actually, behind those compositions at age eight, even at a young age, what hours and hours and hours of deliberate practice and playing around with things. Sure, he probably did have this inclination towards music, and he certainly grew up in the right environment. But perhaps you and I would have been composing at age eight, had we been born in the same circumstances. Who knows? The other element to my problem with the word giftedness at times is it gives little credit to the person who has generated that high performance. Because what we know is a high performance never, ever, ever, ever comes without an awful lot of hard work and dedication. I think that's a really important message, particularly in education, to be giving kids.

[00:05:11.760] – Steve

There's a story that I recall hearing a lot of years ago about a pianist, who performed at the Ladies Garden Party. When she had finished playing, she went over and sat down for a tea, and the women at her table, someone spoke up and said, "That was just wonderful. I'd give anything to be able to play like that." Her response was, "No, you wouldn't. You wouldn't give up half the things that I've given up in order to develop that skill and that talent." [laughter]

[00:05:50.800] – Steve Arnold

Yeah. And that really specialized high performance, these absolute experts in these areas, it also really comes with balance. You can't have it without, as that story describes, you can't have it without enormous sacrifice.

[00:06:08.440] – Steve

Yep. There's few well-rounded high experts. I wanted to ask

you, and I guess you've already touched on this, but let's explain a little further about misconceptions that exist around identifying and supporting gifted and talented learners. I think I've heard one now is missing that role of commitment, I guess, that a person has, which might be labeled as motivation.

[00:06:44.170] – Steve Arnold

Yeah. Absolutely. So identification is an interesting one. As you said in the introduction, I very much champion what I call an inclusive approach to give to the talents of education or I perform it, whatever we want to call it and that's because my views are based upon research, and the research suggests, as I said earlier, that almost anyone, perhaps even all the children we have in front of us, are capable of developing this high performance in any given area. So the question then of identification is what you're actually looking for is potential, and we've just talked about the fact that the potential is in abundance, and then you're looking for current high performance. So are they actually been able to employ those things? And so when we're thinking about classroom environments, we're thinking about education, we can use things like certain assessments that give us an insight into reasoning ability and cognitive ability. And we can use those, but we should never, ever use those in isolation, because, again, they only give us a snapshot. We also know with all standardized testing is that very high scores are very, very reliable, but lower scores are far less reliable because of the tremendous number of variables that are attached to it.

[00:08:05.260] – Steve Arnold

So just because a child isn't scoring high on an abilities test at the moment, doesn't mean they should be ruled out of potential high performance in the future. We also have to keep in mind that the areas of human endeavor that people can become high performing in is almost infinite, and schools only recognize a very small slice of that. So I guess it's a very

long winded way of saying in terms of identification, I do a lot of work with teachers on how to remain open and vigilant to high performance whenever it might arise. And as well as using assessments and their view of how children are achieving against the curriculum, there are certain characteristics of cognitive giftedness or high performance that we talk about that give you an insight into that potential. And particularly when we're working very young children, those that work in the early years of education are fortunate. They get this unfiltered view in terms of how these children think. They haven't been corrupted by us and our systems yet, and they're just bringing with them what they've had in their short lives.

[00:09:19.750] – Steve Arnold

We get this really unfiltered view. We talk about these characteristics, and they're things like early language development. How quickly are they able to make connection between words? How are they able to use sophisticated language? Are they playing with language? In my current context, working in the Middle East, the really important part to remember there is it doesn't have to be the language of instruction. How are they actually able to manipulate and use language? It's other things like curiosity. Are you seeing a child who every time you give him something to play with, he wants to take it apart? Or is there a student in your class that just becomes fixated on a certain element of a subject and just wants to focus on that? So is there that evidence of intellectual curiosity? Social and emotional behavior. Have you got children that start to develop empathy at an earlier age than their peers. Now, I'm not saying that all gifted people also need to be really well balanced in advance, socially and emotionally, because we know that's not the truth, but we also know that being able to develop those skills is a really good sign of cognition.

[00:10:28.430] – Steve Arnold

So Is there evidence, early evidence of divergent thinking and

creativity? So the children, where you give them some materials or a task, and they do something completely unexpected with it, and they do that on a consistent basis, that's a sign of culture and giftedness. And the exciting thing for us is, particularly in young children, we can see those things that develop – I was about to say naturally, that's not the right word, that develop as a result of their early childhood experience and their genetics. But the really exciting thing is all of those characteristics that I've just spoken about can be actively taught. So you can teach children to be curious. So you can teach them to walk towards new experiences, to be open to change, and all those sorts of things. You can obviously teach language skills and advanced language skills. You can certainly teach social and emotional understanding and behavior. So as educators, indicators, the thing that's missing in terms of identification is just how much influence we have over these things that are identifiers. And so what we should be doing is setting up our classrooms so that part of the curriculum or something that sits beside the curriculum is actively teaching these cognitive traits and characteristics.

[00:11:52.030] – Steve Arnold

There are two studies, and stop me if I'm talking too long here, Steve, but there are two studies which I often cite. And one is It's to do with language development, and one is to do with curiosity. So one of the studies says that, and I think it's published by Harvard, I'll send you the citation so you can get this right. But one of them suggests that the number one indicator of long term academic success is the quality and quantity of language used in the home in early childhood. So that long term academic success really hinges on that ability to use language. And it's not a surprise because everything we deliver in the school is delivered through the medium of language. And in fact, all concepts are built on language. So if we know that, then we have this ability to influence that and to make sure that that is a priority and that we work with

families as well as children to really prioritize language and discussion. And it doesn't mean that they have to be searching through a thesaurus every night. It just means things like they have to prioritize talk, and they have to be open to using in new and unfamiliar language with their children in a supportive way.

[00:13:04.390] – Steve Arnold

And they have to do lots of reading, obviously the other things, so we can influence that. So there's one… And that study was a study of young adults who had a track record of extremely high academic results in the US. The other study was a meta study where they looked, they were trying to identify character traits of gifted people. So they had a group, again, of young adults in the US, all of whom had been identified as being gifted during their education, as being academically gifted. And then they used that group of people, and I think it was about 3,000. It was a large group, and they did the big five personality traits with them, and to see if there was a correlation. And what they were suspecting is this idea that academically gifted individuals would be socially awkward, and they'd have that element of being anxious and shy and things like that. But what they actually found was there was one personality trait which tied them together. There was one really clear correlation, and that was with openness. In other words, curiosity. So academically gifted people, advanced people were, yes, very curious, but also it's more to do with being really open to new ideas, being open to new experiences, walking moving towards change and new experiences rather than backing away.

[00:14:33.680] – Steve Arnold

And that, for me, was as a parent and as an educator, was a really profound moment because I thought, well, you can actively teach that.

[00:14:43.950] – Steve

Model it, sure.

[00:14:45.210] – Steve Arnold

You can model it. You can teach it. And so therefore, if we do that, if we set our classrooms up in that structure, we stand to actually grow the number of, quote, unquote, gifted children that we have rather than just identifying the top few.

[00:15:02.230] – Steve

A lot of the listeners to this podcast have coaching roles in school, either as a school administrator or as an instructional coach. What might be indicators when they're in teachers' classrooms that would suggest teachers might be missing either the identification or the support of gifted and talented students?

[00:15:27.830] – Steve Arnold

I think any evidence that suggests that the model of… We talk a lot about adaptive teaching models rather than differentiated teaching models. The reason we talk about that is the old… I'll say old, it's not that old, but the traditional view of differentiated planning for teaching is that you have your groups of children in your mind based on assessment, and you pitch the learning towards them. And we know what that does is particularly for the top end. It's really good for those kids that you've chosen in the top end that you're going to challenge and extend, but it almost has the opposite effect on the others. So it's almost detrimental to the others. So looking at teachers who silo those children, if you like, and pitch the learning directly to those individuals and not to the others, is one thing which I'd really discourage. A collective stretch and challenge is a wonderful thing, but it should be, even if it's not accessible to some of the children at that stage, it should be visible,

and they should feel like it is open to them should they want to pursue that. And that's a huge part of fostering that curiosity and that aspiration and things like that.

[00:16:37.440] – Steve Arnold

So trying to keep an open mind is what it's all about. The other thing is, quite often teachers make assumptions or miss opportunities, I should say, for pointing out to people when they see evidence of high performance. So in other words, we assume kids know what they're good at. A lot of evidence suggests that actually children don't know what they're good at, and you only have to examine your own view of yourself and your abilities to reinforce that. In my experience, certainly, it's very rare that we look at ourselves going, you know what? I'm really good at that. It tends to be the opposite. It tends to be the opposite. And so what we underestimate, too, is the impact of being really targeted and explicit with our feedback when we see high performance. So it's not just saying, "well done, Timmy, you're so clever." It's saying things like, "I noticed what you did there, whatever it might be, I noticed what you're doing there. Do you understand that that is really complicated and really impressive what you've done. That's not what we'd expect for someone of your age. So maybe this is something you want to pursue.

[00:17:51.310] – Steve Arnold

Maybe you'd like to find out more about this because clearly it's something that you're good at." And having those conversations is really important because a key factor for developing high levels of talent, as you mentioned earlier, is motivation. And motivation for children rarely comes intrinsically. It most often comes from an outside source. And again, if you listen to interviews and read biographies of high performing athletes, and musicians, and performers, and generally there's a story in there about how someone saw something. A teacher said this, a parent said that someone saw something and they sparked this belief. And that belief is

what leads to deliberate practice. You don't work hard at something that you don't feel motivated to do. And that hard work is really important. So being that agent in the classroom, and this is true for five year olds, and it's true for 15 year olds, that actively looks for those examples of high performance, and then makes that ready to listen to that child, and sparks that motivation is another thing that I would really encourage. And there are structured ways you can do it. And I guess the third thing I'd say in terms of what you could look for is classrooms that embrace creativity.

[00:19:13.980] – Steve Arnold

So classrooms that allow children to take ideas and make something new with them, and that innovation and creativity. And that's where you get children living in that cognitive dissonance, that you're breaking that cycle of learning and knowledge. You are building those neural pathways that involve higher-order thinking. So not being inflexible with your tasks, making sure you've got that room for adaptation and innovation. Creativity is not only everything for cognitive development, but it is everything in terms of what we need in our next generations of workers – I mean, it's all going to be how we use this technology that we have to solve problems.

[00:19:55.980] – Steve

Your comment about differentiating to the levels struck a chord of an observation I did in a school where it was a middle school, and they had separated the students by their supposed ability levels. I saw this teacher teach a social studies class to the upper group. All I was thinking is what an amazing teacher she was. Two periods later, I saw her teach the same content to the group that had been labeled as a lower group, and I was dying. I could not believe it was the same person. It was strictly the mental mindset at which she had gone into her expectations influencing what she was inviting the kids to do.

[00:20:55.480] – Steve Arnold

Yeah, absolutely. You think about what that does, what that does to that… Children are very perceptive, and that sends a clear message to those children that you need to be taught this way, otherwise you won't understand it. You don't get the fun and exciting stuff because you won't get it.

[00:21:12.700] – Steve

She even had the assignments for each of the three groups on the board. If you were in the lower group, you saw what the higher group was doing. It just spelled right out. What should we be doing to support teachers in their support? School administrators, coaches – what kinds of things should be happening for teachers that best prepare teachers to serve in this role?

[00:21:45.320] – Steve Arnold

I think we don't give teachers, particularly new teachers, enough credit in terms of giving them both the cognitive science and the neuroscience behind learning. That phrase which I really like, which is, "teaching is an art, but learning is a science." We know a lot more about how the brain wires and neural pathways and I think actually we need to do a little bit more, even though it might seem a little bit off topic when teachers are saying, I want to know about the curriculum, I want to know about teaching strategies. But actually, I would love to be more time around how the brain actually creates neural pathways and the difference between a heavily myelinated neural pathway and a non-myelinated neural pathway and how that works. It's not a difficult concept to understand. And in fact, we can all see examples of it in our own life. Because what that understanding does in terms of what's going on neurologically upstairs, is, it gives them that foundation to say that if I just give these kids the time and space to practice things in a very, very deliberate and meaningful way, then we can actually change the brain and make

things develop really rapidly.

[00:23:12.500] – Steve Arnold

When you understand that, there's a book called, "The Talent Code" by Dan Coyle, which I'm sure a lot of people will be aware of. And it's not a book that's linked directly to education, but it's all about his observations of places that develop high-level talent. And he talks about neural pathways in there. And what he just discovers effectively is that there's three things that you need to develop high level talent. It is deliberate practice, motivation, and expert coaching. So in other words, and those of you who are aware of Renzoli's three-ring model of giftedness, you identify that those things almost match these three rings. You can't have high level talent develop without the hard work, and there's a deliberate practice. But you can't have the hard work and deliberate practice without the motivation. So there's the inspiration. There's the positive affirmation and the right environment, things like that. And then the third one is the master coaching. And that's the thing that I think that intimidates, particularly beginning teachers a little bit, because the assumption they make there is to be a master coach of a very, very high performing child, I need to really I'm going to need to know my stuff.

[00:24:31.350] – Steve Arnold

I'm going to need to be three or four steps ahead of them at all times. And when you're talking about a 15-year-old doing higher math, that can be tricky. But the thing about the master coaching bit is all it really means is the child needs to know where they're headed and have a really clear picture of what excellence looks like. They need to have a really clear picture of where they are now, and then they need a roadmap in order to to where they're going. Now, you don't necessarily need to be able to do the thing or to be the expert of the thing in order to provide that really clear view for that child and facilitate that expert feedback. One of the

things I do as well as teaching the underlying neuroscience is to actively teach strategies for extension which don't involve the teacher having to cram the night before and learn the content themselves. You can facilitate make high performance without being the subject expert. Now, knowledge has a place. Subject experts have their place, and I'm not diminishing that. I think it's a wonderful thing to have. But teachers shouldn't feel intimidated in terms of being able to extend children just based on subject knowledge.

[00:25:46.060] – Steve

I can help you find where you can get it.

[00:25:48.750] – Steve Arnold

Yeah, exactly.

[00:25:49.850] – Steve

Without having it myself.

[00:25:51.520] – Steve Arnold

And that's powerful. That's really powerful for a child to actually hear a teacher say, I don't know these answers, but I bet I can figure out a way for us to get there.

[00:26:04.120] – Steve

Well, Steve, this has just been an awesome conversation. I'm so glad that you joined me. I'm sure that some of the listeners are going to have a question or two they'd love to pass on to you. What's the best way that somebody can follow up and connect with you?

[00:26:19.940] – Steve Arnold

That's a really good question. So I'm very happy to receive emails. Is it okay to give my email on here?

[00:26:26.920] – Steve

Go ahead.

[00:26:28.520] – Steve Arnold

Yeah, it’s just steve.arnold@gemseducation.com.

[00:26:38.930] – Steve

We’ll post that in the lead-in to the podcast, make it easier for folks to find.

[00:26:44.040] – Steve Arnold

I’m also on LinkedIn, but I don’t really understand how to give my handle for that. But if people search for Steve Arnold, they’ll find me there.

[00:26:51.930] – Steve

Yeah. All right. Thanks a lot, Steve.

[00:26:54.520] – Steve Arnold

Appreciate it. Thank you very much.

[00:26:57.790] – Steve [Intro]

Thanks for listening, folks. Love to hear what you’re pondering. You can find me on Twitter or LinkedIn at Steve Barkley, or send me your questions and find my videos and blogs at barkleypd.com.

Podcast for Teachers: Seeking

and Building Students' High-Level Talent

What role do teachers play in generating opportunities for the key elements of high performance: deliberate practice, motivation/inspiration, and master coaching? Steve Arnold, the Head of Gifted and Talented at GEMS Education illustrates teachers' roles. He identifies the impact of the "required curriculum" and teachers' options like the use of disruptive questions.

Contact Steve Arnold: steve.arnold@gemseducation.com

Visit the GEMS Education website here.

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Podcast Transcript:

[00:00:00.200] – Steve [Intro]

Hello, and welcome to the Teacher Edition of Steve Barkley

Ponders Out Loud. Teaching is a complex and rewarding journey, and I'm always eager to explore the many ways teachers engage students in their learning. This podcast is dedicated to supporting you, the teacher, as you inspire and guide your students. Thanks for joining me. I'm excited you're here.

[00:00:30.110] – Steve

Seeking and Building Students' High-Level Talent. The current Corporate Head of Gifted and Talented at GEMS Education, Steve Arnold, is joining our podcast. Steve has been a grade six teacher in Australia and a system leader in schools working in the areas of curriculum and assessment, as well as inclusion and well-being. I have asked Steve to guide a conversation today around what teachers can do to maximize the identification of and support for high talent in students. Welcome, Steve.

[00:01:08.180] – Steve Arnold

Thank you so much. Thank you for having me.

[00:01:11.330] – Steve

I'm wondering if you share what experiences you've had that have shaped your views and understanding around giftedness.

[00:01:21.230] – Steve Arnold

Yeah. So as you described there, I began my career in Australia, which is where I'm originally from, teaching grade six, which is the top end of the primary school in Australia. And then I went on this bit of an odyssey and ended up in the UK. And after a few years teaching in the UK, I ended up for the first time in my life in an independent all boys school as Deputy Head Academic, so in charge of all things curriculum assessment. And this particular independent all boys school was highly academically selective. So we had a group of cohort of all boys who on abilities testing, reasoning testing had indicated they had very, very high academic ability. So the

pressure, if you like, was on, particularly with fee paying parents, to make sure that we had our curriculum and our assessment and everything to do with teaching and learning was extending these children and preparing them for these top end universities and amazing careers and things like that. So this is the first time I found myself in this environment of high academic ability. And I really did my homework, and we looked at extension, acceleration through the curriculum and all those sorts of things.

[00:02:41.620] – Steve Arnold

Over the course of a few years, my view completely changed, because we soon started to see what actually made the difference in terms of giving meaningful stretch and challenge to these boys. And it wasn't what you might think. It wasn't about giving them extra maths or moving them through to the next exercise in the textbook or about making sure that we had the top-end subject knowledge, or that that does have a place, what actually made the difference was changing that linear model of progression through the curriculum of actually saying to these kids, okay, you have this fire level of reasoning ability, and you have this ability to retain knowledge. Let's see what you can do with it. So for finding opportunities for that creativity and innovation and divergent thinking, not only was it far more engaging for the boys in general in terms of being in that environment, in terms of the impact it had on longer term academic progression, it was far more powerful. And it was far more powerful because what we were actually doing is prioritizing cognitive development over knowledge retention. And that's not to say that knowledge retention didn't have a place, but actually we were building the building blocks of high performance in the mind by actually building these neural pathways that led to high levels of cognition, being able to make connections between very different ideas, being able to take some knowledge and make something new with it, being able to evaluate, being able to analyze, being able to research, being able to collaborate,

all of these really important skills that not only develop the thinking skills that are vital for future careers and future success.

[00:04:34.910] – Steve Arnold

That was a bit of a revelation for me because I thought this wasn't what I expected. I expected that part of my job was having to go out and recruit professors and PhDs and the best of the best in terms of subject knowledge and be absolutely on point with that. But actually, what made the difference was embracing creativity and innovation.

[00:04:56.190] – Steve

I'm wondering, could you describe what a teacher could initially spot in students that would cause the teacher to look further for student talents? And I'm wondering if I can pose it to you from two different directions. The earlier your early childhood primary one, but then I'm wondering about secondary students that have been overlooked as the second area. Would you hit both of those for us?

[00:05:29.640] – Steve Arnold

Yeah, absolutely. I've got a deep respect and admiration for early years educators. And I think not only are they miracle workers, but they're also in quite a privileged position because they get to see this unfiltered view of the children as they come in and their early child experiences. So for those of the teaching younger children, there are some signs of cognitive ability or cognitive giftedness that aside from any assessment, will give you a bit of an insight into the way they're developing. One of them is language acquisition and the use of language. So the children that not only acquire language early, but use quite complex language and understand links between language at an early age, that's a real sign of cognitive ability, but also of longer term success, because, of course, language is how we deliver the entire curriculum.

It’s how we build on concepts. So if they have this natural inclination towards language, they’re really fortunate. And that’s true if they’re multilingual, so if at home, they’re speaking a language other than language of instruction, that can be a huge benefit to them as well. So embracing that multilingualism is really important if it exists in your environment.

[00:06:54.190] – Steve Arnold

Curiosity is a huge one. So children that demonstrate this desire to take things apart, see how things work, explore. The children have that really busy mind. That’s a really positive sign, even though sometimes that can be slightly disruptive. It is a really good sign of that cognitive ability. As is divergent thinking. So again, when you give young children, I don’t know, whatever it might be, some materials, and you expect them to make something, a building, a model, whatever it is, and they take it and do something completely different with it. But relevant to the task, that ability to think creatively and be divergent, that is a terrific sign of intelligence, as is the early development of social and emotional understanding. Empathy can take some time to develop, but some children develop it really early. And that is a sign of long term success and high level cognition of the ability to actually bring others into play. We always talk about the stages development, how you have that stage where you’re in parallel play, where there’s two young children, they’re playing at the same thing, but it’s irrelevant with the other one standing there. They just happen to be using the same resources.

[00:08:12.960] – Steve Arnold

Then all of a sudden, we see them play together. And when that happens quite early, that’s a really good sign, too. So there are lots of different things. But I always use this analogy with my teachers when we’re talking about young children, that I always say to them, I want you to imagine that you’re five,

And I want you to think about those cognitive characteristics I just mentioned, and you can choose one to have an abundance. Which one would you choose for your long term success? And it's really interesting hearing what their preference would be. But what research tells us actually for long term academic success, it is language development, and that's no surprise. And the other one for long term, or to increase your likelihood of being classed as gifted, it is the curiosity piece. It's being open to new experiences, it's having that really curious mind. So they're really good characteristics to look for and spot. But on the flip side, they're also really good characteristics to build in the children. So you can be the identifier, but you can also be the agent of change. So you can make sure your classroom environment in the early years is pitched towards doing all of those things, embracing curiosity, embracing divergent thinking, focusing on language development, then you actually increase your likelihood of having gifted children, because we know that it's all about experience and deliberate hard work.

[00:09:43.870] – Steve Arnold

So that's the early years. The older years are quite interesting. I'm sure a lot of listeners with lots of experience will have come across the disengaged child who turns out to actually have a pretty high level of understanding hidden beneath their… and the things to look for are actually quite similar. So this idea of divergent thinking can manifest, particularly in teenagers, in very different ways. Divergent thinking can manifest in taking ideas and doing something really exciting with them, but it can also manifest itself in a blunt resistance to anything that you put in front of them. And they want to do things – they have a way of thinking, a way of working, and they're not interested in conforming. And that can feel like disruption, and it can sound like disruption, but it can also be a sign, actually, that they have something really high functioning going on underneath. You can't always, with these children, rely on

assessment results because it’s so dependent on their willingness and desire to engage in those processes. I think the other thing that you can you can really look for it, or that can be overlooked is if you suspect that there’s a higher level of underlying ability that you’re not seeing yet, is looking for alternative settings, almost, or environments for them to demonstrate that knowledge.

[00:11:16.130] – Steve Arnold

So sometimes there’s a reluctance, particularly in teenagers, to be different in any way, even if that means being exceptional. Sometimes the worst thing a teenager – the worst idea to a teenager is being different, full stop, even if that difference as being pretty good at something. So allowing them to demonstrate their knowledge and understanding in a way that suits them, in a way that’s potentially not public, in a way that’s potentially just an understanding between the child and the teacher is a really important thing to explore for those who might seem disengaged. Yes, there are lots of potential barriers, but the really important thing to understand is it doesn’t matter whether they’re five or 15. There is the underlying potential potential and ability for a child to become high performing at any age and any stage. So remaining vigilant to that and not letting your existing ideas about their ability stand in the way is really important. If you see high performance, even if it’s just the early signs of high performance, tell them and be open to it.

[00:12:20.830] – Steve

How would you describe the role of environment, experience, and hard work as you connect to giftedness or talent?

[00:12:32.160] – Steve Arnold

Yeah, it’s almost everything. The things that you listed there are almost everything. This question of what role does genetics or God-given talent, if you want to call it that,

what role does that play in the talent development? Well, the research is in, and it does depend on what area of talent we're talking about. Obviously, there are physical characteristics for any physical talent, which are advantageous. If a pianist has long fingers, that helps. If a high jumper has long limbs and a high level of natural muscle density, that helps. So there are things to do with certain pursuits, but in terms of cognitive pursuits, actually, it's probably all a mixture of environment and deliberate practice. So it's that exposure to things and then being able to, having the desire to work really hard on. And we've said before that when you see humans who are really high performing and experts in things, you only see the finished product. You don't see what's going on underneath the foot. You don't see all the hours of work. And nobody develops high-level talent without working hard. There's a great quote, K. Anderson, who's one of the godfathers of this research, where he says, research shows again and again that geniuses are all always made, not born.

[00:14:02.950] – Steve Arnold

So it's always about that environment and that delivered practice. You can't have high performance without it. And so what does that mean for teachers? Well, it means that there are three things that you really need to be able to foster to develop high talent. And it's the fundamentals of what our job is. One is, there has to be that delivered practice. There has There has to be opportunities to actually have repetitive practice to embed those neural pathways, but you can't have that deliberate practice without the motivation. Now, motivation is an interesting one. We might call it inspiration. We might call it whatever that spark is that actually drives that deliberate practice, that desire to spend hours and hours on that deliberate practice. So you need that deliberate practice and that motivation or inspiration, and then you need the master coaching. And so this is a really important element to remember for teachers. Master coaching for really highly talented individuals or teaching for really

high talented individuals doesn’t have to mean that you know more, that you become an expert. You don’t need to be an expert to teach an expert. If that were the case, we wouldn’t generate any experts.

[00:15:25.500] – Steve Arnold

We wouldn’t generate any geniuses because you can’t always know more than than somebody else, especially if they’re just being that high level of talent. What that master coaching means is you give them a crystal clear view of where they want to get to. You give them a crystal clear view of where they are now, and then you give them a really clear pathway of getting from where they are now to where they need to be. And we as educators, we can facilitate that. We understand how that works. We don’t need to be the finished product in order to facilitate that. One of the things I’d really, really implore teachers to do if they see signs of giftedness and high ability, is to absolutely embrace it and try not to be threatened by it, and be very, very honest with that child in terms of how you’re going to help them. You don’t have to know all the answers. You go through that learning journey together, and you can embrace that process. And that’s an incredibly powerful I need to do as well.

[00:16:32.760] – Steve

So how do you help a teacher who’s got the question in their mind of, I’ve got this required curriculum, and now I’m hearing about environment in experiences. How do you encourage teachers to deal with what at least appears a conflict?

[00:16:54.370] – Steve Arnold

Yeah, and it can be a conflict. We have requirements. We need to get through a curriculum. We have qualifications to work with. There are constraints. We can’t just have these open, wonderful, creative, innovative environments, where we’re following the wind with the child. I think the curriculum

gives you your framework I think one of the things I would say is if you have a particularly talented pupil in a curriculum area, for example, and let's use, I don't know, it could be the sciences as an example. You have a budding scientist in your mix, and they're absolutely so far above what the other people are doing in their level of understanding. Your professional judgments are really, really vital. So you can make professional judgments and assumptions that along the path of the curriculum, either they will already have some of that requisite knowledge, or if they don't already have it, they can arrive at that knowledge, A, very quickly, or B, through an alternate means. It's so important that, yes, we want this innovative and creative stretch and challenge, but it's so important that that stretch and challenge is in some way tied to the curriculum.

[00:18:12.520] – Steve Arnold

Otherwise, it does become unmanageable. And I wondered if I could just outline one strategy, my favorite strategy for doing this.

[00:18:21.700] – Steve

That'd be great.

[00:18:23.770] – Steve Arnold

So something I've developed here at GEMS is called Disruptive Questions. And when I say I've developed it, I didn't invent and like all things, it came from a culmination of other things. So there's a book from published by Harvard, I think, called, "The Innovator's DNA." And it's a book related to business and how to be innovative in business. And one of the sections there is about disruptive questioning in business. So how to actually use disruptive questions to move forward. And I read it, and I thought, this is so applicable to education. So I've adapted that idea to education and to come up with these disruptive questions. Now, all a disruptive question is,

is it’s a single question that is tied directly to your learning objective or your lesson, what you’re trying to teach them, that disrupts that linear cycle of knowledge. An example of a disruptive question could be, for example, let’s say we’re teaching an ancient Rome. And for the whole class, our objective for this week, however it might be, is to understand the key events of the fall of the Roman Empire. What caused the fall of the Roman Empire? There’s our base learning.

[00:19:35.280] – Steve Arnold

That’s what I want all my children to come away with. But I have this very high performing child who’s obsessed with Romans, and he knows everything inside out. So How can I actually provide the right stretch and challenge to him without going a million miles away from the curriculum? So all I need to do is to match that lesson objective to one disruptive question, which could be something like, what could have been done differently to prevent the fall of the Roman Empire? Now, in order to answer that question, that child still needs to know and understand the events that led up to the fall of the Roman Empire. And then he needs to make predictions in terms of what would change and what would the end result be. So in terms of where that child is cognitively, it’s way above and beyond. Or it could be a question like, what would the world be like now if the fall of the Roman Empire had been prevented? So what would be the ongoing influence of the Roman Empire? How might that affect language? How might it have affected culture? What do you know about the spread and the direction of travel?

[00:20:47.280] – Steve Arnold

And again, it’s joining all these complex ideas. Now, at the end of that lesson, I can be confident that in terms of my curriculum, that all of my children have covered the key events of the fall of the Roman Empire, including that child. What’s more, when we talk about an inclusive stretch and challenge, that child can feed back what they had done to the

whole past, and it’s relevant, and it’s interesting, and they can engage with it, and all of a sudden you have this aspiration and inspiration, where the kids start to think, well, maybe I’d like to try something like that next time. And it’s a really simple trick to match each learning objective to one of those disruptive questions. We often talk about this taxonomy and going up the layers of thinking. Well, I think we can short circuit that a bit. All you need is one meaningful question, and then you’ve linked it to the curriculum. So that is one technique that I really encourage people to try.

[00:21:44.180] – Steve

I like it. Just to wrap us up here, I’m wondering if there’s any closing thoughts you’d like to share in both encouraging and supporting teachers in bringing these opportunities for high performance to a large number of students?

[00:22:06.200] – Steve Arnold

Yeah, it’s a really good question. I think giving teachers, and if you are a teacher, allowing yourself the time and space to build that understanding of what learning looks like, the science of learning, how we develop knowledge, how we develop skills. Because once you have that thorough understanding of how you actually develop and build on high performance, talent, giftedness, whatever you want to call it, that then comes with a really clear understanding that while the performance might be exceptional, the individuals are not exceptional. In other words, we probably all have the ability to develop that high performance if we have the right mix of deliberate practice, motivation, master coaching. So as soon as you have, as soon as a teacher has that idea, all of a sudden, the approach to challenge becomes completely different, because in the back of their mind, they’re thinking any of these children actually could develop high performance if I put those three fundamental principles in place, and if I have that stretch and challenge that is accessible and visible to all. So one of the things that I really encourage with

teachers is making sure that they feel comfortable in taking a little bit of risk.

[00:23:29.360] – Steve Arnold

But the great thing in planning for stretch and challenge and creative stretch and challenge in your bathroom is it's low states. If I compare it to an adaptation for a child that might have a specific barrier to learning, if I don't get that adaptation for that child right, that child potentially doesn't access the curriculum, and that is a disaster. That's not good for that child, and it needs to be rectified immediately because there's a problem there. On the other hand, if I have I have very high performing children, and I have designed a creative, stretch and challenge task for them, and it misses the mark, then if it misses the mark because they're not ready for it yet, then I just bring them back to the core curriculum, and I really haven't lost anything. If it misses the mark in terms of that they completed quickly or whatever it is, then there's something then to build on. We haven't lost anything. We haven't actually had that moment of disaster. So it is a fantastic, positive element of classroom from teachers teaching to experiment with and to build your practice in, because you can put that stretch and challenge in there without having that really high risk in place.

[00:24:40.920] – Steve Arnold

It's also a fantastic thing to collaborate with others with, because once you build this bank of understanding, whether it's a bank of disruptive questions or whether it's a bank of really creative tasks that's linked to the curriculum, you build your capacity all the time in doing it. But I'd really like to encourage people to just have a go and take some risks.

[00:25:02.530] – Steve

Well, the message I'm hearing is that I can become a high

talented teacher.

[00:25:11.060] – Steve Arnold

Absolutely. Absolutely. Yeah. And it’s all got to do with having that open and inclusive approach to it and understanding exactly what’s going on in the background so we can foster that talent for anyone. You don’t have to be a subject expert. You do have to be an in developing that talent and understanding how it works.

[00:25:34.000] – Steve

Well, Steve, it’s been great. What’s the best way for a listener to get in touch with you if they have a question they’d like to follow up on?

[00:25:44.350] – Steve Arnold

Yeah, I’d be really happy to field any questions. They can search for me on LinkedIn. If you just type in Steve Arnold, Gems Education, you’ll find me on LinkedIn. But the other way is by email, and it’s simply steve. Arnold@gemseducation. Com. So that’s G-E-M-S education. Com, and I’ll be happy to hear from you.

[00:26:04.470] – Steve

Terrific. We will put that in the lead into the podcast so it’s easy for folks to find. I really appreciate your time and your energy and your inspiration.

[00:26:14.240] – Steve Arnold

I really appreciate it. Thank you, Steve. It’s been great.

[00:26:19.380] – Steve [Outro]

Thanks for listening, folks. I’d love to hear what you’re pondering. You can find me on Twitter or LinkedIn at Steve Barkley, or send me your questions and find my videos and blogs at barkleypd.com.