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Paul Thies.: The ever-increasing pace and impact of technological change has been the subject to fascination for investors, educators, entrepreneurs, and pundits of varying stripes, at least as far back as 1965, when Gordon Moore first postulated his now-famous law. As emerging technology continues to build upon itself, the trajectory of change is likely to continue accelerating and tomorrow's workforce

Paul: Excellent. Kara, what drew you to want to help promote STEAM learning and training?

Kara Connon: I first became aware of STEAM or STEM as Sam referred to, it was originally back then, through a major roads project that I was working on at the time. I'd had very little of involvement with school pupils, so I moved back to Scotland after five years in London as a stakeholder consultant to become completely immersed in a new role as an education liaison officer, which was a completely eye-opening experience for me, but within the first few weeks, I absolutely knew that that was where I wanted to focus my efforts, even though I had been so focused on what I was doing originally.

More events that I ran, the more I could see that spark ignite in the pupils and they

inclination, and then STEAM careers are like that vehicle that are going to get them there.

Paul: Now, Sam, Lainie had used terminology that speaks about, in a sense, an aha moment, thinking differently in terms of how you approach STEAM, broadening your understanding of that sort of thing. It is really encouraging people who might-- they might be pigeonholing, their perspective of STEAM, it's really challenging them to open that and give it a different look. I'd like to ask you, Sam, was there an aha moment for you in regard to STEAM education that helped you appreciate its importance?

Samuel: Yes. If you don't mind, I'd like to jump back really quick to what Lainie said. Because she said that there's people out there that don't maybe appreciate math

Paul: I got you. More people can feel like they're-- they can see themselves as a part of it and more students, quite frankly. I think Sam's earlier point, can see themselves also participating as well. Now, Kara, you touched on the role of parents working in concert with educators. Let's talk a little bit about parents as STEAM steam advocates. What are some effective strategies for reaching and enabling parents so that they can become stronger STEAM advocates?

Kara: One drawback that we do see as much with the pupils that we work with and the teachers, and we can widen their understanding and their knowledge of STEAM careers and different pathways into them. The parents are so influential. If we don't give them that same level of knowledge to help the pupils, make these informed decisions about their future, then a lot of the great work that we do might not come to fruition. This is exactly why it's so important for us to educate the parents as well as the pupils. For example, apprenticeships 10, 15 years ago were considered the root into career if a pupil didn't get into university, but that mindset has completely changed in recent years, pupils are learning the benefits of apprenticeship, such as earn while they learn, becoming immersed in a company from the start, hands-on experience over the academic group.

If the parents don't know about this shift in thinking, it could then lead to uninformed decisions, outdated conversations on the right career pathway for their child. It's therefore imperative that as part of our Jacobs STEAM strategy that we incorporate an element of working with parents and communities, for sure. We have in the making Jacobs virtual career's fair, which then used will hopefully be done both in school and at home. Pupils and parents can navigate the site to learn about all the different careers in a company such as Jacobs together, so they can make these decisions, and it'll be broken down into school subjects, so the pupils can start right from the absolute basics of what they know they enjoy and then by going into the school subject hubs, that you're going to see around the virtual room, they can learn about all the different jobs in Jacobs or similar engineering companies that have these subjects at the heart of them. For example, if they go into the geography one, they learn about all the things we do in water and environment, from math and

We know that STEAM and STEAM education and STEAM volunteering, connects us and the work we do with these communities. We also know we can influence future generations to consider meaningful careers, whether it be at Jacobs or elsewhere, but again going back to the top of the call, they're going to address the challenges of today and we're all about solving the challenges so we can have a more connected and sustainable world for the long-term wellbeing of society of our species to borrow that from Sam.

It also provides us STEAM and STEAM education provides us an amazing opportunity to partner with our clients in a different way that maybe is a little outside of our projects. Another way for us to create that social value that is incredibly important to us as an organization, again, to show up to prove that we do what we say, and we say what we do. I think that's a really important piece of why we've doubled down on our commitment to STEAM and STEAM education.

Paul: Jacobs, I think it's fair to say that Jacobs sees it as something that's right to do. It's baking it into its culture, but also from a strategic standpoint and as a follow-up, Lainie, how does STEAM support the company's strategy, especially other organizations may be listening and they have some nascent STEAM initiatives, but why should they really go all in? How does it support the strategy as well as just being something that would be right to do?

Lainie:

I'm not trying to promote, but I think it's really important. It just came to my mind is that we're trying to hit the parents, which is important. We're trying to reach the peers, which is doing these STEAM adventures, going to schools, talking to their peers so then it's shared information. Also, we're doing the third-party act. We're not the educational system, but we're showing that these things are super important. As many influences as you can get, shapes these malleable minds. Kids are so malleable. Why not get to them as early as possible? They're doing a good job.

Paul: No, absolutely. I think your enthusiasm for the topic comes through and I think that's important as well. It's not just a matter of pounding the kids with information, but making them excited about wanting to learn. I'm not a teacher, but all the best teachers I ever had made me excited to learn. The next couple of questions, first one I want to ask Sam and Kara. I'll start with you, Sam, and then Kara we'll have you come in. Is there anything especially surprising you've learned as you've been immersed in efforts to promote STEAM education?

Samuel: Yes. That is such a long laundry list.

Paul: Now pick one.

[laughter]

Samuel: Delivery of information. I think I expla

brings it full circle. Kara, same question for you. Is there anything especially surprising you've learned as you've been immersed in efforts to promote STEAM education?

Kara: Yes, I do first want you to say, I completely agree with Sam and I think a huge part of the base training that we do give our STEAM ambassadors is to help them understand that the way they speak to their colleagues, who maybe all have the same engineering, jargon or ways of speaking is very, very different. Not even just for understanding, but of keeping the interest of pupils. There might be the detail of it, but everything has to be interactive because if you think how long you can pay attention to a subject that you perhaps don't know anything about, take that down to a seven-year-old, you've lost them in minutes if you can't keep them engaged.

For me, I can't decide a surprise is too strong a word or not strong enough, but I am completely blown away by the commitment and sheer enthusiasm of our STEAM ambassadors. They all see the benefit to the pupils, but they also see the benefit to themselves of what they get out of it. They get out there, they get stuck into a huge variety of events from early primary schools through to secondary school, right through to college and university students.

The offers of help and support not just for me in my role, but to each other when sharing event ideas and collaborating to ensure that pupils get the best experience possible and a continuous stream of new STEAM ambassadors is all based on the spreading of the word on how important STEAM education is, but also the buzz that the ambassadors get themselves by knowing and seeing the difference that they've made to a pupil's life.

Paul: Oh, that's wonderful. Then my last question, this is for Kara and Lainie. This is really for those other organizations, people out there in the professional sphere who may have a STEAM education platform of some size, some are more capable than others. Maybe they're just starting out. Just in the interest of sharing thought leadership and ideas, and, Kara, I'll start with you. What advice would you give to other employers starting out on their STEAM journey?

Kara: I've got quite a few. I'd firstly say, aim not just to sponsor events and actually go out there and get your hands dirty. Companies have so much to give pupils and so much valuable knowledge to share that they could potentially shape the rest of that pupil's life. It's also only by getting out there and talking to pupils and helping them understand the vast number of options for their further education and employment out there that they can start to make those informed decisions about their future.

Have a diverse team of STEAM ambassadors from all areas of the business, all grades with different pathways to give the pupils as broad an idea of the different career options there is to them and showing them that there's not always one written to career and it takes people of all backgrounds and all abilities to create strong, effective teams not just in industry, but in any scenario that they go onto their future life. Don't be scared of virtual delivery. There are pros and cons to virtual and face-to-face, but by choosing to incorporate virtual engagement to your STEAM strategy, the number of you pupils that you can reach is far, far wider.

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You can start to sport those STEAM cold spots, which it was previously harder to get to just because we've got so dependent on doing everything face-to-face. Continue building up your STEAM networks and get senior management and middle management buy-in, and this then shows that STEAM isn't just an add-on to your day job. It is something that you live and breathe as part of your role, and it's the benefit for your employees and not just the pupils, and it supports the employees and contributes to their future employee pipeline for the business as well.

I would say, don't be afraid to consider partnering with other organizations, it's not of them and us situation. We could support other people with what we can do, but we necessarily have the same skills as them. Use other organizations to compliment or supplement your own STEAM engagement. Finally, whilst I recommend working with schools on what you deliver to support what they need, I would also consider things like sustainability, net zero, climate change, as well as positive mindset messages to run through all of your activities as these are going to be the challenges that the pupils are going to face again, again in their futures.

Paul: Excellent advice. I really like that about encouraging organizations to collaborate not to see it as a competitive endeavor. Lainie, same question for you. What advice would you give to other employers starting out on their STEAM journey?

Lainie: I would say, don't be afraid to consider partnering with other organizations, it's not of them and us situation. We could support other people with what we can do, but we necessarily have the same skills as them. Use other organizations to compliment or supplement your own STEAM engagement. Finally, whilst I recommend working with schools on what you deliver to support what they need, I would also consider things like sustainability, net zero, climate change, as well as positive mindset messages to run through all of your activities as these are going to be the challenges that the pupils are going to face again, again in their futures.

