

Brentwood Academy: How Interactive Learning Gets Done



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Customer Spotlight webinar

Tim Crawford: Hello and welcome, everyone for joining today's Intel customer spotlight webinar series. These webinars highlight innovative industry-leading companies that are undergoing digital transformation, have tackled business and technology challenges, and created new opportunities using Intel data centric technologies and platforms. I'm Tim Crawford, CIO and strategic advisor at Avaya, and your host for today's webinar.

Today, we're excited to feature Brentwood Academy. Now, Brentwood Academy faced similar challenges shared by many educational and corporate environments. In light of the pandemic, they were trying to figure out how to operate virtually. And they were looking beyond just remote learning and took on the challenge of creating the virtual classroom. And we're going to learn how it all started with a walk in the park but ended up as a comprehensive solution that positioned the institution with the classroom of the future and looking beyond. So, in today's webinar, we'll discuss this in more detail and how they tackled this challenge. With that, let me first introduce our guest. So, our guest is Chris Allen, who is IT Director and Robotics Program Director for Brentwood Academy. Chris, welcome to the program.

Chris Allen: Thanks for having me.

Tim Crawford: It's great to have you. And I'm really looking forward to this conversation, because I think there are a lot of really interesting things that folks are going to learn from this discussion. So why don't we start out, maybe taking a minute and talking about who Brentwood Academy is, and talk about the institution, but then also who Chris Allen is and your role there in Brentwood Academy.

Chris Allen: Sure. So, Brentwood Academy is a co-ed independent Christian college-prep school for students grades 6 through 12. And we're located about 10 miles south of Nashville. This is actually my 20th year at the school; I've been supporting the staff and our network and information systems during the day. And I've been the IT Director there for quite a while, and in the evenings, I actually get the opportunity to work with our robotics teams, which is really the highlight of my job there.

Getting to work with students is really an awesome thing that I get to do. We actually have 12 competition robotics teams, extending from the middle school all the way through our high school. I've been in the robotics program now for seven years. And over that time span, we've won numerous world and state championship titles. And we also host some of the best robotics competitions in the country. We're highly regarded by the REC Foundation, by them and producing some of the best tournaments around, so we really enjoy working with kids. But not only that, we teach the engineering design process, which you know covers a lot of things that we use to develop our solutions for this webinar.

Tim Crawford: That's great, Chris. And I think that your mention of the robotics program comes into play, and we'll talk about that a little bit further into the program, but just the combination of your role of Brentwood Academy, as well as your role within the robotics program, specifically, I think is a great kind of one-two punch that people can kind of take away from.

Let's maybe start by setting the stage for folks so that they can understand some of the challenges. Of course, we moved to work from home and remote learning kind of came into the conversation. Maybe you can kind of lay out the process that you started in some of those challenges that you were thinking about. And I know that there's that walk in the park that's going to come into this.

Chris Allen: Yeah, so I'd like to kind of go back to a timeline, really, when it all started for us. It was shortly after the robotic state championship, which we hosted. It was at our school—the very last event that we hosted. A few days later, we were about to go on spring break. And once we went on spring break, the school made the decision to not return for in-person learning. It was at that point that we decided to use the Zoom platform, which many schools and other businesses switched to quickly.

It was a quick and easy solution. But we knew at that point, it wasn't something that was sustainable for long term. We wanted something that was a little bit more robust.

Tim Crawford: You know, when you talk about your thinking around that, you know, I mentioned the walk in the park, maybe you could talk a little bit about how that came about in that conversation.

Chris Allen: So, my wife and I would take early morning walks in a local retired airfield, and as we were doing laps around the runway, we would talk about how things were going with remote learning, what the future could look like. There were so many unknowns at the time with COVID-19, that we talked about the impact that that would have on the return to school in the fall.

So that really got me to thinking, you know, I want to create a solution that would work really well for our school to allow for in-person learning, and not just in-person learning, but uninterrupted in-person learning. So, allowing our, our school to pivot easily, and I knew that technology had to be there to accomplish that.

Tim Crawford: You know, Chris, you've talked about how some of the existing solutions just weren't—they were good solutions—but they just weren't fitting the bill for what you had as a vision for Brentwood Academy. Can you talk to that a little bit further to help folks kind of understand what your thinking was, and the process you were going through, because I think folks could really relate to that.

Chris Allen: Sure. So, I think in the beginning, like from what we had before, in many of our classrooms, we had projection systems and teachers were casting content to those screens. That just wasn't really, in my opinion, going to cut it in terms of adding in the remote element. So, I started looking at interactive displays and looked at a number of them. With kind of the focus on the Zoom element, I felt like the Zoom Room conference room element was an important piece in connecting groups of students with remote learners. So, I wanted to kind of apply that same technology that had already been in place and apply it to the classroom. A lot of the solutions on the market were not thinking this

way. And I did find some solutions that were more Zoom-proprietary and were not really open to other technologies. And once I stumbled upon ViewSonic, that really just opened my eyes, and I was completely blown away by what they had to offer. It wasn't just the Zoom platform, but it was so many other things. And I couldn't be happier at this point.

Tim Crawford: And so, I want to kind of maybe dig into that and talk about how you brought the platform in, and you looked at a number of different solutions. You know, you also talked about how it really wasn't kind of jiving with your thinking of what you were really looking for. Maybe spend a few minutes talking about that process and the different solutions. And more importantly, the experience that you had and how that compared to what you were all ultimately trying to achieve.

Chris Allen: I think ultimately, trying to rethink what a virtual classroom experience would look like. One of the biggest challenges was how was I going to connect teachers with in-person learners and remote learners at the same time. And at that point, I knew that basic laptops with webcams, were kind of, you know, off in their own kind of isolated area. In most classrooms a laptop might be set off to the side and becomes somewhat of an afterthought, and I didn't want the remote learners to be an afterthought.

I wanted the remote learners to be just as engaged as the in-person learners. So that was really kind of a piece of the puzzle, but also the technology needs to be open to legacy systems and devices, things like document cameras, and other things like that, that really enhance learning, things that teachers are already used to using.

And another part of it too is making the system easy for teachers. I think one of the biggest challenges in a classroom is the teacher trying to figure out how to teach and do their technology at the same time. So, looking at all of these things, I wanted to find the right solution that reduced clutter in the classroom, so less cables, bringing the technology to the front of the room as opposed to the side of the room, and being able to present dynamic and interactive content. I think those things were really important to creating a really engaging classroom environment. But on top of that, I wanted to enable the collaboration aspect. So, you know, students working together from, you know, in-person to remote learners, they need to be able to collaborate together.

Tim Crawford: I think that's a piece that we often kind of skip over, it's teaching, it's not one directional, or it's omni-directional. We learn from each other, we learn from others, even the instructors learn from the students. How did you go through the pilot of this considering, and we'll get to the actual technology itself in just a minute, but you mentioned before in one of our past conversations about a pilot that you went through, and that was that was very enlightening in the process. Maybe spend a minute talking about that.

Chris Allen: Absolutely. So early in the summer, and I think the first week of June, we actually purchased our first ViewBoard. And every year, during the summer, we run robotics intensive summer training sessions for our students on our competition teams. So, we knew that this was one great opportunity to pilot the system to a small group of students—I think we have maybe between four to five robotics teams—they were all split up into separate classrooms. So, we wanted to create a remote scenario, but also on campus scenario. So, the students were connected through Microsoft Teams, from

each classroom back into our robotics lab, where the ViewBoard was, and we had the instructor in the robotics lab that was communicating and working together on problems. And that whole process worked really, really well. We wanted to create a safe environment for not just the instructor, but for the students knowing that we want to create a safe space, social distancing, and other things like that.

Tim Crawford: It's interesting to me, because your pilot wasn't necessarily the typical classroom environment, it was, you know, coming from the robotics program, which I think is really neat. Let's maybe switch gears a little bit and talk about the partnership. You mentioned ViewSonic was part of the technology and Intel came into this, as well as Microsoft. So, let's talk about how each of these different players played a role in putting together the solution. And I think there's some non-traditional pieces in this that some may not otherwise see. So, let's start with the ViewBoard technology. Let's talk through that.

Chris Allen: Sure. So, the ViewBoard technology is like many other interactive display panels that had been on the market for many years. But what ViewSonic has done is provided the myViewBoard application, which runs in Windows and several other platforms, but you know, running on Windows, I feel like it has the most robust toolset of any of the platforms.

But myviewboard.com is actually a website that our teachers can go to and create whiteboards ahead of time and create that content that then they can come into their classroom and sign in and they have that same content available to them. When I was talking about the comprehensive toolset that the ViewBoard has with the myViewBoard application, things like the Magic Box, being able to drop in YouTube videos, calculators, quizzes, polls, and Thrown content.

And part of the Thrown content piece we've been using very extensively with our remote learners who actually able to take pictures of their work with their cell phone and actually Throw it to the ViewBoard in the classroom. So, it's just really, really created this awesome way to deliver to bridge the collaboration between teachers working on problems together and that kind of thing.

But the other side of it too, is that the ViewBoard technology and the Word application also integrates with cloud storage. So, think Dropbox, OneDrive, Google Drive, those things. Teachers that may have a Dropbox account or something like that are able to access their information and bring that up in a ViewBoard session at any point. I like to think of the ViewBoard as like an infinite canvas, I mean, the teachers can create as many whiteboards as they want; they can then share those after a class with the students. And that's been pretty successful.

Tim Crawford: No, that's great. But there were other pieces that came into this too. And it sounds like the ViewBoard, and both what you just shared in our past conversations, the ViewBoard offers just a phenomenal opportunity for the experience. But Intel and Microsoft also played a role in this too. And I want to bring those two components into the mix and why and where they played a role into this experience.

Chris Allen: So, like you were saying Intel and Microsoft played a huge role in this. Initially, when we were first looking at this, we wanted something that would support Zoom. Well, we can run Zoom on

Microsoft Windows, but you can also run Microsoft Teams on Windows.

We wanted something that would address some of the privacy concerns with Zoom, and Microsoft really had the best solution for us to create some closed groups that were not open to others. We're already a Microsoft customer, all of our teachers and students have Microsoft 365 accounts.

And Intel played a huge role in this because we use Intel® NUCs on every ViewBoard. The [Intel] NUCs are the heart of the ViewBoards in my opinion. I think that that pairing of having an Intel NUC with Microsoft Windows, all of those things, were important to creating a solution that worked well for teachers.

A part of that, too, was considering security, you know, a teacher walks up to a ViewBoard anywhere on campus, they can sign into that ViewBoard using their Office 365 credentials. But in this case, using Windows Hello, meets teachers provided with a 502-security key that they log in with. But also, from a Microsoft standpoint, we mirror all of our student information systems, class schedules, and rosters are mirrored in the Microsoft Teams. So, it was more of something we wanted to create: this blend of the best tools possible to make an easy switch for the teachers. And that switch went over very well with our teachers and students.

Tim Crawford: Now, that's great. And it's great to hear how you've taken various components, Teams, the [Intel] NUCs, the ViewBoards, and combined them together to create the experience as opposed to here's a specific technology and it's solving a specific problem.

Chris Allen: Right.

Tim Crawford: It's really interesting. So, you know, if I go a little further into this and look at the bigger picture. You know, you started to talk about this and how the three components the ViewBoards, the Intel NUCs, as well as Microsoft Teams come into play with the student learning systems. How is this changing the experience for both teachers and students? You've had a little bit of time to run it, you know, how are things going? And what, what are you experiencing through this process?

Chris Allen: So, I like to think that this has changed the ability for students to learn anytime, anywhere. And that's a really important piece. You know, I think the virtual whiteboards being at the front of the classroom allows our remote learners to see exactly what the in-person learners are seeing. That's an important element there because I feel like the students are able to stay caught up. If they miss class, for whatever reason, if they have to be quarantined, or they're out sick. The students are more engaged now, too, because we're able to provide more dynamic content on the screens. And the other part of it, too, is the whiteboards themselves are shareable. So, you know, at the end of the class, a teacher can share what was created on the ViewBoards with the students. So, overall, the full experience has worked out really well.

Tim Crawford: Now, there's another piece here, Chris, that I know you've kind of brought in. And it's an area that might be a bit sensitive for some folks, and that's cameras in the classroom, especially with the students; can you talk to how cameras played a role in enhancing this classroom experience?

Chris Allen: Sure. So, we ended up purchasing two cameras for each classroom, one is mounted above the ViewBoard, and that's facing the students in the classroom. And then the other one is mounted at the center of the room hanging from the ceiling facing the ViewBoard. These are both 108-degree cameras with full microphone arrays, which really creates like the virtual classroom that we were talking about. You know, students feel like they're there in the classroom, when they're a remote learner. And it's created some great options. I mean, the camera that's mounted above the ViewBoard, has been used in many cases by teachers where students are working at the board, in-person learners are working at the board with remote learners. And they're collaborating on projects together. So that camera has been super helpful for that, as well as the ability to use that camera for classroom discussions. The other camera, that's hanging from the ceiling that faces the ViewBoard is great for doing demonstrations at the front of the room.

Tim Crawford: That's great. And it sounds like a wonderful experience, especially as you know, students might be remote, as you mentioned, if they were out ill or otherwise couldn't be in the classroom. You know, I'd be remiss to talk about cameras in the classroom without asking the question: how do you address the concerns around privacy with regards to this?

Chris Allen: So, I know that early on in the pandemic, one of the big issues was a Zoom bombing. And after considering that and switching to Microsoft Teams, all of our Teams are closed groups. That's one way we address privacy. But also, we do have guest access turned on, but the teachers do have to invite the guest users into a Team. We don't record any webcam video at all through Teams. But we do have the ability to record the ViewBoard canvas as well as the audio that's being captured in the classroom.

Tim Crawford: That's great. That's great. But Chris, you know, let's talk about what's next first, before we get to Q&A, where do you go from here? So now you've had experience and working with the ViewBoards both in the classroom and through the pilot process this past summer. Where do you go from here?

Chris Allen: So, one thing that I'd like to think about is how these would be used outside of the pandemic and the students in a very old traditional setting, with a rigorous academic schedule, students may decide that they want to come to school anyways, if they have a fever, or they're just not feeling well. And I feel like the ViewBoards with remote aspects built in allows students to connect to their classes at any point. That was not really an option before now. Now that is, and hopefully that will help to slow the spread of viruses and other diseases that are spread around schools. And, in turn, this will improve learning overall.

You know, the importance of accessibility, I think, is another part of this, being able to share whiteboards through the cloud, as well as recorded whiteboarding that's happening is another way; students can reference the material after classes so that it helps them prepare for tests and other things like that.

But let's just say, you know, a student has a trip that they that they're about to go on, a school trip, they don't want to miss their classes, they're able to connect into their classes as they're happening. So, I

think those are all things that looking beyond just the pandemic, seeing how this is going to be useful. So, yeah.

Tim Crawford: Yeah. And you've, I know, in our prior conversation you were talking about how you have already started to use this experience for things outside of the traditional classroom, specifically with a robotics competition. And so, I think that would be great for folks to hear, because even if they're not in the higher ed or academic space, maybe there's some other ways that they could take advantage of technology like this too.

Chris Allen: Absolutely. So recently, on Halloween, we held a robotics competition, we were one of the very few and still are one of the very few in-person robotics competitions that have happened since the pandemic. And we're able to do that because of the ViewBoard technology. Having that in each classroom has allowed organizations of schools to stay in classrooms together, watch the live stream of the competition through the ViewBoard.

So that that helps those teams to know when their matches are coming up, and that kind of thing. And then also connecting and remote judges and other professionals to talk to the students, review the robots, reviewing their engineering notebooks remotely. I can't imagine trying to do any of that, you know, without having the ViewBoards in place. So that's been tremendously successful; we actually pitched the whole idea to the REC Foundation, because we want robotics competitions to continue happening. That's a really important thing for the students. And it's really important to us, too.

Tim Crawford: Now, that's great. Do you think that you'll continue to be able to do some of these competitions and maybe even bring in remote judges, even post pandemic?

Chris Allen: Oh, absolutely. I think this is something that we will continue to do. From here on out, you know, just having the tools available to us, is just going to enhance the competition as a whole. We know outstanding judges that are all over the country and being able to connect in those engineers and professionals to be a part of a tournament that's happening locally is pretty amazing. And I am so excited about the possibilities for the future.

Tim Crawford: That's really great. That's really great. So, Chris, first question, can teachers and or students work with the ViewBoard remotely? I think you touched on this a bit, but maybe you could expand upon it a little further.

Chris Allen: Sure. So, they absolutely can. The ViewBoards that we have running Teams, if a teacher is teaching from home or remote learners from home, if they share the ViewBoard screen, then those remote participants can actually request control. And that has allowed our remote learners to collaborate on stuff together. But also, I think the other part of that, too, is, you know, teachers, you know, their quarantined at home, and they need to, you know, teach and work on the ViewBoard, they can actually do that. So, I really believe that, you know, the ability for teachers and students working on the ViewBoard remotely is just such an add to the whole system.

Tim Crawford: Yeah, now, that's great. And that kind of leads to the next question that I have here, which is, if a teacher is teaching remotely do they need a ViewBoard at home? That's a great question.

Chris Allen: Yeah, they don't actually, we actually provided all of our teachers with ViewSonic WoodPad, which is a pen tablet type device. It's a USB device. And that in conjunction with myviewboard.com that teachers can go log in, sign in to myviewboard.com, and create content, and actually teach through the myviewboard.com canvas using the WoodPad, which has been pretty awesome. But also, you know, regular touch devices are capable of doing this. So no, you don't have to have a ViewBoard to achieve the goals. But I will say that having a ViewBoard is really an awesome experience. And our teachers have just loved using it.

Tim Crawford: And that's, that's great to hear. So, our next question is, what are some of the characteristics that drove you to consider the Intel NUC? And maybe I'll add to that a little bit and just say, maybe expand upon how are you using the [Intel] NUC, or what are you using it for specifically?

Chris Allen: So, the NUC, actually, was, we're already familiar with the [Intel] NUCs, even prior to this solution, we actually use NUCs all over our campus for our digital signage. So, we knew ahead of time that the [Intel] NUCs were capable of delivering, and that they were stable. They were fast. So, some of the things that we really looked at were, you know, is it cost effective? And then the [Intel] NUCs are cost effective. Are they small form factor? They are very small and sit behind the ViewBoards quite well. They have plenty of processing power. And they're also power efficient. So, they don't produce a lot of heat, which means low fan noise. And those were all things that we really took into consideration when we chose the [Intel] NUC as being the heart of our ViewBoard.

Tim Crawford: Okay. Next question is—you kind of touched on this actually, in the last question in our discussion, but let me just ask you again—what are some of the ways that you expect to use the ViewBoard solution beyond the virtual classroom? You talked about the robotics competition as one example. Are there other ways that you're thinking about using this beyond just the classroom experience itself?

Chris Allen: Absolutely. So, one way that we've already been doing this on a daily basis is our college reps are actually connecting in through the ViewBoard and talking to our students daily. And that's actually made it to where the college reps don't have to travel to our school. So that's been a huge plus.

We've been able to conduct board meetings and staff meetings using the ViewBoard; that's been wildly successful as well, staff training. So, we look to also in the future, maybe use the ViewBoards for maybe speech and forensics tournaments. So that's kind of another element outside of the robotics, but it's another way of also connecting in remote judges and things like that.

Another side of it, too, is that we've been using the ViewBoard technology to connect all the classes together at the same time, so that our administrators can do virtual assemblies and actually talk to groups of classes and students rather than everyone congregating into the same space.

Tim Crawford: Interesting.

Chris Allen: You know, yeah, so that's been pretty awesome.

Tim Crawford: That's great. So, the next question actually kind of piggybacks on that a little bit, I think, which is, since this has been in production for a number of months, can you talk to the feedback from teachers and students? And you mentioned it briefly, but maybe, you know, how are folks reacting to it? What are they finding?

Chris Allen: So, the response has really been overwhelmingly positive, I actually had a conversation with one of our teachers yesterday. And she was telling me that the technology has been such a blessing for not only the teachers, for our students. Some of the students that she teaches said to her, you know, I don't know how I could stay caught up if I didn't have this technology, we have students that have been out for two weeks. You know, other students have said that this is one way that they feel like, even though they're at home, they still feel like they're in the classroom. And I think that's a really important element.

Tim Crawford: Wow.

Chris Allen: You know, the isolation that goes with the pandemic and remote learning, that's a real thing. And I honestly think that, if we can create an immersive environment, because the students feel like they're there with their peers, that's a really, really important thing. And the parents have also responded so positively to this. And I mean, I could just go on and on, and I'm so thankful for it.

Tim Crawford: Wow. That's great. And I think that's just an incredibly ringing endorsement, when you have that, that kind of unprompted response from the students and parents who are downstream participants in this experience.

So, we only have time for maybe one more question. Has the use of the ViewBoards change the culture around teaching at Brentwood Academy, and if so, how? That's a great question.

Chris Allen: Yeah, that's a really good question. So, I think the biggest thing that it's done is started to remove some of the barriers for teachers with the use of technology. In the past, you know, using technology in the classroom was such a cumbersome thing. Now that the ViewBoards are at the front of the classroom, they've effectively become the whiteboards for daily use. In some ways, they're kind of forced into using it.

But I will say that, for the most part, you know, I walk around the classrooms and see, you know, no remote learners connected. Maybe there, there are no remote learners that day. But the teachers are still using the ViewBoards. And that's been a huge thing.

And on top of that, in terms of changing the culture, I think, you know, there's a teacher that actually taught me as a student years ago. She has been teaching remotely through the ViewBoard since August. One of her comments on this is that she loves it. She really loves using it. And to get that kind of ringing endorsement from somebody like that is just amazing to me. So, it's absolutely changing the culture. Teachers are excited to use the technology. And that's a really big deal.

Tim Crawford: That is a big deal. Regardless of whether you're talking about the classroom experience, or beyond, even in corporate environments, when people get excited about using technology, that's a win-win-win all the way around. And I think the other thing you mentioned early on, Chris, was that you talked about how the administration is using the ViewBoards for administrative efforts, you know, whether it's board meetings or other activities, too. And so, it sounds like it's really an immersive piece of the Brentwood Academy.

Chris Allen: Yes, it absolutely is.

Tim Crawford: Now, that's great. Chris, so I want to thank you. Thank you for sharing your perspectives, sharing your insights, and experience with this. Really appreciate your time.

Chris Allen: Absolutely. Happy to help.

Tim Crawford: So absolutely, yeah. So that's all the time we have for today's webinar. I want to thank Chris and the Brentwood Academy for taking part in today's discussion. As we've seen, there are a lot of different things to unpack here beyond just the classroom, and the classroom is one piece, but there's so much more there. Thanks again for everyone that joined us live and please be sure to check out all of the customer spotlight webinars and look for an invite to our next webinar soon. Have a great day.

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