How To Get the Most From the Cloud in Education – Part 1

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Cloud-based solutions can maximize benefits for educational institutions.

Arthur Germain: Welcome to the Digital Aspirations in Education Podcast. I'm Arthur Germain, and our guest today is Christian Chavez. Christian, can you tell our audience a little bit about what you do?

Christian Chavez: Yeah, sure. Thanks a lot, Arthur. I'm Christian Chavez. I'm the data center, Cloud Solutions Architect for spar technology partners. My focus is on as my title states data center and cloud My background is from I came from Cloud Managed Services, and now helping out Aspire in the data center with all things compute, but mostly focused on cloud.

AG: That's terrific it because today, what we really want to focus on is the cloud and its use in educational environments. So I have a few questions for you. And, and, you know, feel free to kind of riff on any of these questions for the audience. Yeah, so the first is simple - Why would my school or my school district want to move to the cloud in the first place? I mean, what benefits? Does the cloud provide over a traditional on premise solution?

Removing boundaries

CC: Wow, you said simple. It's not quite that simple. So let's just take a step back, right? Because I think the benefits actually are determined on based on who's going to consume it or use it, right. So in terms of education, each education space or district, you know, kind of they, they kind of roll out their own IT infrastructure, they may be part of a larger organization who provides services to them. So they kind of consume things differently. So the benefits are different across the board. But ultimately, there is the benefits that we can go over. So moving to the cloud, let's just again, now let's level set the word cloud, because that's sort of like a term that just kind of gets thrown around. And what that means to education really, is about removing boundaries, right. So the benefits are about removing those boundaries. And then we can go from there.

So if we remove those boundaries of what we know, as cloud could be your education, LMS, right, moving out to a SAS base offering, or taking just your compute infrastructure and leveraging maybe a hyper scalar cloud like AWS, or perhaps you're just consuming services from Azure, whether it's

database services, or maybe you're just consuming some of their compute. So there's a lot of different levels of what we'll consider cloud, but ultimately, leveraging any of those infrastructures really brings a lot of benefits into certain areas of education, right? I would ask, like, what, what did our IT teams in education do when 2020 hit right? When the when the pandemic hit, and everybody had to go remote. People really felt how they weren't actually realizing benefits of what cloud infrastructure could do, which is removing those boundaries that as I mentioned earlier, so because we're constrained or IT infrastructures constrained inside of education, being able to be flexible enough to have your staff and, and your students move out to their homes and start consuming. You know, services, there was a lot of there was a scrambling that was actually happening, right.

Realizing benefits

So that's one way to determine, you know, were you ready for cloud? And what were the benefits? If you were right, if you're already consuming that? Right, there is one of the benefits is, you know, gives you the flexibility to actually extend out in any situation. But as we have seen, I'd have cons. I'd had conversations with a lot of the IT teams, and they weren't ready. Right. So going back to the question, the benefits, right is, as I mentioned, the flexibility the ease of use the consuming of services, and the cost benefits. So going back to my original, what I said about 2020 is look at the virtual, you know, the virtual classroom today, what does it look like today? Most people have figured it out, right, we've had two years of figuring out the virtual classroom. So being able to now offer services to students that cannot be remote, right, we're still kind of dealing with some of the some of the things that are going on with inside of education when it comes to classroom environments.

And there's a lot of mandates constraints that are going on, some people are still doing remote and some people are actually back into the buildings. So now the schools have to kind of look at that model and say, Okay, I have remote learners and I have in class learners and how do we manage all of this? Um, so one of the benefits is going to be, you know, the virtual classroom environments because now you're able to scale a lot faster as students are either being remote, so you kind of like shrink and increase at the same time. Based on that utilization I'm, I hope that at one point, we're going to get to a point where, you know, everybody's back in either back in brick and mortar, you know, we're back in school, everybody's live classrooms. But it seems to be that the virtual classroom seems it might be here to stay, because now schools can actually increase their student traction that comes into school, right, the amount of students that they can actually service or not now limited to a, just a physical location, we can actually add remote learning because we figured that out, right?

That's one way of the benefits. And that was the biggest one that we've seen in the last two years is that ability to be able to scale out virtual classrooms. Accessibility, that's another one of the benefits, right, you have access, as I'd mentioned, a lot of these applications that the schools were using, are now moving to a SaaS based platform, which is still considered cloud, right, because it's not on your infrastructure, there's no deal that you're paying a monthly cost to be able to provide these services to your students, and the teachers.

So a lot of the accessibility to LMS, SAS based learning systems or even hyper skills, as I mentioned, like AWS, Azure, they provide a pay, you know, a monthly pay as you go type environment. And as you need it, you scale up real quick. One of the things that we're dealing with today, right are the, the shortages that are happening, we're not getting infrastructure fast enough to be able to see the growth that's

actually happening inside of the data center. So we're dealing with this, this crisis now of some shortages, where we're trying to get some products in servers are being delayed, the chip manufacturers are having some issues. So now getting product into the data centers is become cumbersome.

And if you're leveraging cloud, a lot of the benefits, as I mentioned, is there's no there's, it's the ease of use the access to the compute, and hardware with that lift, somebody else lives somewhere else, you now have access to at any, any given time, right, so you're able to scale much faster. So having access to those resources and services is key in education, right, because as you're bringing more students in, you need to grow at a faster rate. And as I mentioned before, a lot of this is really with cost savings. So the cost savings aspect of it is you pay for what you consume. So when you buy infrastructure for let's just say a school and whichever way they're consuming it, whether you're purchasing it from somebody an IT infrastructure inside of a state wide funded program, or maybe your district is just taking on the full impact of buying into data center, right.

So when you buy data center, there's a cost up front, there's a capital expenditure that happens there. And then when the summer months come, you're still paying for that, right. Whereas if you're if you're doing virtual classrooms, or you're actually have services provided to students, and teachers, when summertime comes, you can actually scale all that back. So you now are presented with a cost savings over the time that the students aren't in school. So you're able to, as I'd mentioned, you you're able to grow and shrink based on utilization from student traffic, right. So there's, there's a lot more cost savings to when you add automation and some of the other services that you can consume on either a traffic based or consumption based monthly cost as opposed to a capital expenditure.

Another great benefit, right, everyone has this top of mind, we've got a rampant issue with ransomware. We've got issues with security. And if you offload that to a service based security, that could be in a cloud, whether it's just a service, you consume SAS Base Service, or your build your own security services inside of a cloud based solution like AWS and Azure. So now you're able to leverage their secure features that they provide, rather than you having to buy and purchase and look for other products that would meet your needs. Most hyper scalars today provide that security aspect as a service all in one. Plus you also, you know, those products that typical education spaces using today to actually secure their infrastructure, their data, you know, they have to look for those products. Those products are also available out in the clouds as well.

So you can not only you don't have to pay for it up front, you can actually consume it again as a month to month model inside of AWS or Azure, one of those others. And I do want to preface that, you know, I keep mentioning AWS and Azure and Google's Another one write in for education, which is really big. But there are other clouds out there. I'd mentioned earlier that I came from a cloud based model, before it came to aspire, and that cloud base was actually built on top of VMware. Right. So a lot of the impact that happens when any IT organization is trying to scale out to what we consider cloud, such as AWS, there's a lot of work that has to happen, from the applications perspective to you to be able to either replatform or redo your whole application stack inside of AWS, if you leverage another cloud provider that actually provides you a VMware underlying platform, you can take your existing virtualized environment and just move it and they provide the same services, like security, and access and flexibility, all those are all built in. And it's not just the hyper scalars that are doing that. So there are

options out there. If somebody is trying to make that move, I mentioned scalability, agility is one of the other ones.

And you're not buying the hardware front, you're not locked into hardware, where now if nobody's running anything on it, you're still paying for it. So again, the consumption model is really the cost savings that would be realized. And one last thing I do want to mention is a lot of these, a lot of the schools are actually providing services to students. So they do have applications that they're providing to students. And those applications are a great fit for a cloud based model, whether it's SAS based, or whether it's actually being built, or maybe it could be an off the shelf solution that you can consume as a service inside of one of the hyper scalar clouds. Again, now you're paying based on consumption. And it also gives you some flexibility in how you actually deliver that in terms of proximity, or maybe how it's being developed. So a lot of these tools that are being provided to you from cloud services, or, you know, you get to leverage and a lot of a lot of the tools, you know, they come with some free aspect to it. There's also some other aspects that are driven by the amount of information that's traverse between your IT infrastructure in the cloud. And so that's the consumption model. But yeah, so I would say like, those are some of the benefits that I'm seeing and having conversations around when it comes to putting education in the cloud.

AG:: That that's great. Christian, I appreciate you walking everybody through that. And, you know, I want to circle back on that one last part that you talked about the kind of applications that can be moved to the cloud. I think everyone's familiar with the communication applications that were that were cloud based, the zooms and WebEx and, and the other types. And, you know, I'm not sure if we'll ever get past, you know, asking somebody, Hey, are you still on mute? Could you take yourself off mute? Yeah, I've heard from teachers that they want to be able to say that in the classroom live, hey, please put yourself on mute. And but could you maybe talk a little bit about some of the maybe not so obvious applications that might be, you know, might be moved to the cloud for educational institutions? You know, beyond that, that your communication that we're all seeing?

Moving specific applications

CC: Yeah. And so when, when you're talking to applications, there's a few things to take into consideration. And, you know, can this be moved to cloud? Is there a SaaS based service already in play for it? If it is, what does that look like? How do we connect how to, you know, if it's a student service? How do they connect? So there's a lot of things that you need to take into consideration when it comes to moving an application. And, you know, helping determine that really is just a process of discovery. How are things consumed? Is this an in house application? Is it a off the shelf application? And as I mentioned earlier, right, how are we going to consume this? If it was in cloud? One of the things to understand is applications are the key things inside what I see as inside of education, because it's the students are experiencing, right.

Their experiences are based through applications. So some of the applications they're consuming Blackboard today. There's other open source LMS services that are being consumed as well. And it's the student experience. And it's not just that, right. So we have education, that's our still like today are building apps. We live on apps on our phone, we walk around with their phones, and the experience of either finding your way through school, or getting access to grades or getting access to services that are being provided by education. Again, these are all applications that are being consumed by the student

who essentially is paying the school for a service right? And the same time the teachers as well consume the services.

So your audience being the student and the teachers and the faculty. Applications are like The lifeblood of education and how people are consuming that experience. So when you're looking at that application, the interaction between the student, the end the teachers and the faculty, what's that going to look like? What's the impact? And what's the ease of use? We get into development, right? So how are these things being developed? I mentioned, you're either developing applications, or they're coming off, you know, some off the shelf solution that they're, they're pushing out, can this be put into cloud? Some, some solutions can't be right. So there, you know, when we're talking cloud, I don't want to say that everything belongs in cloud, right, there is a time to move to cloud and there's a time to build on prem. Right. So there has to be a hybrid aspect between the two. So your application needs to be hybrid as well.

So if you're, if you're trying to stretch from on prem to out in cloud, or maybe it's a SaaS based solution, it needs to be able to handle load, it needs to be able to perform correctly. So when we talk about applications, and what can be moved, or what kind of data can be moved, it really is going to be determined by the be the access and the level of performance you're going to get right.

So what's the offset if I keep it on prem? Or if I move to cloud? I mentioned earlier, if you have a development team that's developing applications for services that students are consuming, there are tools that you can leverage inside of cloud, that help your teams actually get the code out faster and get it deployed quickly. In today's day and age, we're developing and pushing out as fast as we can, right back in the day, it was you pushed out maybe once twice a year. And then everybody suffered until you did. But now it's a constant movement of this, develop, push out, test, put it into some type of environment, where it where it can be consumed, and then ultimately out to production. Because we want to get those applications out to the students and faculty as fast as we can. What makes for a good application in the cloud, as I mentioned, things that are modular things that are being developed in today's standards, we talk about containers a lot when we talk in cloud, and development, those are the things that you can kind of look at that you're going to consume as a service, which is going to be a cost benefit to you, because as I mentioned before, is you're able to scale things according to the traffic patterns that are happening in school, right.

So if you have an application that you've built, or it could be off the shelf application, that can be in cloud, if you need the resources to run an application, that's performant. Obviously, during the day, when the students are online, when the students are in the building, consuming the services, you're going to need a lot more infrastructure. So you scale the infrastructure up, right? Once the students go home, and it's after hours, you can now release a lot of those resources. So there's a cost savings to that automating the growth, and the shrinking of infrastructures where you realize a lot of these cost benefits.

So those are the types of applications that are key to be able to move into cloud, right. And I'd mentioned earlier, there's a SAS base version of a lot of these applications as well. We're used to consuming a monthly per student kind of scenario. They're doing the same thing on the backend, right? So the more traffic they see the patterns that they're seeing, they drive infrastructure up and down and scale just as if you would if you were consuming cloud. So when I think of these apps, and I look back at,

okay, we got learning systems, we have students service systems, we have faculty systems, what's the uptime necessary for these applications.

One thing we didn't talk about right is the uptime. So applications have to be available at all times. That's another key piece that we have to consider in your application. If it doesn't need to be up, and we don't need to do any kind of high availability or make sure that it's resilient. And it's cost effective enough to run on prem, then let's keep it on prem. But if you had need something that needs to be up all the time, resilient, you build for that resiliency. And if you want to do that on prem, it's it can be quite costly to try to keep something that's resilient from an infrastructure, from hardware, from power to cooling to all these different things that have to keep all these things running really affect whether you're going to be resilient or not. Cloud offers that right. So any cloud infrastructure would offer the resiliency at the hardware level, at the disaster recovery level is something that you'd have to build in but you build you know, you have to build that into your infrastructure. But again, you have the flexibility because there are no borders when it comes to talking about cloud, right? There's no parameters. It's sort of like a, you can run whatever you want at once. Every time you want and consume, obviously, there's a cost associated. But again, with keeping that in mind, we want to drive costs down, I imagined. And I know I've talked to a lot of IT systems who are looking to drive costs down. And that's what you drive costs down. You make it elastic, meaning you grow when you need it, and you shrink it when you don't. And there's your cost savings.

AG: Christian, that's great. I really want to thank you for joining us and for walking everyone through. Part one is we talked about some of the benefits of the cloud for education as well as some of the applications that we use. And I want everyone to join us for part two, when Christian is going to walk us through a little bit about what you should expect as you deploy the cloud to your team. And maybe well, we'll get into a migration timetable for the cloud. Thank you, everyone for joining us for the digital aspirations in education podcast.

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