GK	We are back with another episode of teaching across learning environments, the podcast where we talk about taking your remote teaching nightmares and turn them into remote teaching dreams.
CLH	That tickles me. I love that. And in fact, I think we can do it. So it looks like today, we're going to be talking about technology across learning environments. Gina, get ready, because this is a biggie.
GK	Are you going to tell me to play Kahoots?
CLH	While I do love Kahoots, we are going to take a slightly higher level view and let listeners hone in on the exact technology they want to learn more about. In the pandemic there was this insane influx of technology and it's a lot of platforms to cover. So today for the CTLE pathway, we are going to focus on some of the frameworks for using technology in the classroom.
GK	So, a little higher level view, not the nitty gritty details. Is that correct?
CLH	That's correct.
GK	Because I read that, as of June 2022, there were 9,575 ed tech startups in the United States, and over 500,000 educational apps available for use by teachers and learners, and a Google search of educational apps tallied more than 9.35 billion results.
CLH	And I think 1.72 billion of those were mine. That is an insane number of apps, but where there is a need, an app shall arise.
GK	In November 2021, Ed Week Research Center asked 846 teachers, in a survey from across the country, this question: How much of the day do students typically spend using ed tech? About half the teachers said their students spend 1-4 hours per day using ed tech. Calculate that across the school year and that means that the majority of students spent anywhere from 180 to 720 hours using ed tech during the 2021-2022 school year.
CLH	That's on top of how many hours per day they spend on things like Snapchat, so essentially, we need our cellphones glued into our eyeballs at this point.
GK	We are going to talk about frameworks today. So, what are the frameworks?
CLH	Have you heard of Ruben Puentedera?
GK	He developed the SAMR Framework that helps teachers look at how they currently use technology in their classrooms and then helps them level up as they gain confidence with new practices.
CLH	There are four levels: 1. Substitution, 2. Augmentation, 3. Modification, 4. Redefinition. Hence, SAMR.

GK	OK, you explain Substitution and Augmentation, the first two levels of SAMR, and then I'll get Modification and Redefinition. Then we'll talk about how we know if using tech in this way is even effective.
CLH	Alright, sounds good. Substitution is the lowest level in which technology acts as a direct tool substitute, with no change. So, for example, a student is allowed to type notes in a Word file, instead of writing by hand in a notebook. No functional change, but just a tool substitute. In Augmentation, technology is a direct tool substitute, but there are some functional improvements. So, to stay with that note taking example, students take notes in Google Docs, on a tablet that has a camera, and they can add hyperlinks within their notes, and can take photos of activities to insert them into their notes.
GK	I'm getting this. Great. So as we move up the ladder, we are on Modification where technology not only enhances the learning activity, but it also significantly transforms it. Sticking with the note-taking scenario, students might revise their notes for sharing, via a blog, which requires them to refine their own thinking on the topic in order to be able to communicate it to others in a public format. Last one is R for Redefinition and that level is the highest level and it requires the teacher to think about learning activities that were previously impossible without the use of technology. Isn't that cool? So, staying with the note-taking scenario, students can work in teams on a shared Google doc, to collaboratively generate and refine their notes, which they can present to students from other schools via Zoom.
CLH	That's super cool. There is an analogy for the SAMR model, comparing it to types of coffee: Substitution would be just a cup of coffee – no functional changes. You go from tea to a cup of coffee – still caffeine, but there is a substitution. Augmentation brings us a latte – add a little foamy milk on top.
GK	Got it. Modification is like a caramel macchiato – an enhancement that also transforms it.
CLH	And then redefinition is like the Pumpkin Spice Latte – inconceivable from the original cup of coffee and in my personal opinion, gross.
GK	What's most important to remember here is that while the Redefinition level is the most transformative in terms of integrating technology, not every learning activity needs to be or should be wholly redefined. Sometimes you just need a cup of black coffee.
CLH	True, so when we think about the SAMR model, it's also helpful to think about this other concept called Triple E. (EEE) As we integrate our teaching with the SAMR model, it's also helpful to ask if the technology we are using is effective and how we know what to use.
GK	So what is Triple E?
CLH	Triple EEE was developed by Professor Liz Colb at the University of Michigan and she's saying: Don't choose the tech tool just because it's a good tech tool, but rather

	look at the learning goals and determine what the right tech tool is for that learning goal. Which is basically backwards design.
GK	Right, I see it. So that brings us right to the R place in SAMR: Before we Redefine, we stop, we take a Triple EEE moment to determine what the best way to redefine is.
CLH	Exactly. The Triple EEE Framework is built around three action verbs: Engage, Enhance, and Extend. Can I send you some questions to read that connect to those verbs?
GK	Please do. OK, got them. Engage - which listeners might remember connects back to Session 4 on Student Engagement. Does the technology help students focus on the task of the assignment or activity? Does the technology motivate the student to start the learning process- is it a hook? Does the technology cause a shift among students from passive to active learners?
CLH	Enhance - the second E, relates back to Session 5 on instructional strategies and it asks, does the technology help the students to develop a more sophisticated understanding of content? Does the technology provide scaffolds for learning and understanding concepts and ideas? Does the technology create unique paths for performance-based learning and assessment that can't be achieved with other tools?
GK	And the last verb in Triple E: Extend. That connects back to Sessions 2 and 4 on Culturally Responsive Sustaining Education and it asks us: Does the technology provide opportunities for students to learn outside of the traditional learning environment, such as physical classroom, class periods, and the school day. Does the technology provide bridges to connect learning in the classroom with students' cultural and social lives and experiences? Does the technology allow students to draw from and further develop skills that they use in their everyday lives?
CLH	So these frameworks both are built around three things: They want us to build from where we are now, to focus on integrating technology in ways that support learning goals and objectives, and ensure we are not just jumping into all of the technology at once and getting overwhelmed.
GK	Teachers can and should take time and build the experience organically. We all need to set reachable goals for ourselves in terms of trying out new technologies.
CLH	That is some good advice. So next up listeners, we're going to be able to explore both of these frameworks a bit more in the next session. So go forth, and prosper my friends.
GK	Have fun and don't get overwhelmed. Do the frameworks.