ASU Prep Global
Arizona State University






Informed Meandering

Designing untethered K-12 learning models

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Informed Meandering

Redesigning K-12 learning from one path to many

Education after high school was once a limited, linear choice: college, workforce, trade apprenticeship, or military. Today, these pathways are expanding and diversifying. High schools now embed Career and Technical Education (CTE) programs, offer internships, and provide opportunities to earn college credits and industry-recognized credentials.

Jean-Claude Brizard, President of Digital Promise, sees a trend in how people prepare for their careers. Noting a study his organization undertook to map a wide variety of career paths, they learned a common thread. None were linear. They all meandered. To Jean-Claude, the question then becomes, "How do we support informed meandering, where learning is ubiquitous and captured everywhere, not just in schools?"

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When learning is no longer confined to classrooms, it is multidirectional, embedded in experiences, and lifelong.

This shift reflects a realignment of outdated systems to modern realities. Nate McClennen, Vice President of Innovation and Strategy at Getting Smart, emphasizes that "learning everywhere" isn't new, however. It is rooted in the past.

"Indigenous and pre-industrial societies relied on mastery-based, personalized, and project-based learning. It's not that we haven't done this before. We are just stuck in an industrialized model that reduces student learning to single test scores."

As schools are being designed or redesigned accordingly, a picture is emerging of learning that offers tremendous flexibility, yet remains anchored to durable skills and foundational knowledge.

Rationale for Innovation: from narrow to broad

The traditional grade-bound K-12 system, followed by four years of college, was designed for a binary workforce—blue-collar or white-collar. Today, high-tech jobs demand advanced skills, blending blue- and white-collar roles. Meanwhile, higher education faces significant challenges, with institutions merging or closing at unprecedented rates.

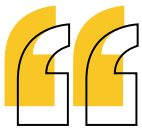
Federal workforce initiatives and credentialing pathways now offer affordable alternatives to traditional degrees. These short-term programs enable faster entry into high-wage careers, meeting the growing demand for skilled labor. High schools are also embedding college courses and career exposure, giving students a head start.

The Economic Case for Change

Rising tuition and living costs have heightened skepticism about the ROI of a college degree, especially as student debt creates long-term challenges. Despite this, degree holders continue to out-earn non-degree holders over their lifetimes. This paradox underscores the need for flexible, incremental pathways that make education accessible and sustainable.

Colleges and universities are reshaping how students earn degrees. ASU's partnership with Starbucks to offer tuition-free college access or incremental credentialing programs are enabling students to balance work and learning. These models highlight the importance of incremental, flexible approaches to education.

As technology rapidly reshapes industries, learning is no longer limited to a finite period but continues throughout life. "There is increasing flexibility in degree attainment, including credit for prior experience, stackable credentials, high school dual enrollment and competency-based approaches," notes Nate McClennen. Partnerships between K-12, higher education, and industry create new opportunities to learn while still earning.



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Personalized Learning for Better Outcomes

Future learning models must focus on personalization, enabling students to chart their own educational journeys. Teachers will act as coaches, fostering curiosity-driven, student-led learning. "Learning should be customized, but that doesn't mean the outcomes are customized," McClennen explains. Core, technical, and durable skills together serve as a guiding "north star to personalized and purposeful learning experiences."

The Carnegie unit is giving way to mastery-based learning, where students advance at their own pace and demonstrate tangible competencies. In this dynamic environment, the ability to learn and apply knowledge becomes the ultimate skill for success.

Frameworks and Principles for School Designers

Whether starting from a blank page or innovating within an existing program, school design can be overwhelming. A tried and true framework of design practices will inform how the design process will

> **The only way we can develop durable skills is to put students into real world experiences, so they can actually practice them.**
>
> **— Nate McClennen, Getting Smart**

Durable Skills as Your Design's North Star

"Durable skills," a rebranding of the term "soft skills," help students to navigate work and life. Employers want staff who can communicate, collaborate, or think critically to identify problems and develop solutions. Creativity allows us to reframe problems or entertain new perspectives. Perseverance to see things through, or the ability to make decisions even in times of uncertainty are both important to the workplace and life. Empathy and advocacy allow us to see situations and people through other lenses. Self-awareness about our strengths or weaknesses, as well as self-management, the ability to set goals, monitor, self-assess and adjust, along with the ability to bounce back from setbacks–all are valuable durable skills in the workplace.

Examples of Key Durable Skills

- **Communication**
- **Collaboration**
- **Critical thinking**
- **Perseverance**
- **Empathy**
- **Advocacy**
- **Self-awareness**
- **Self-management**

happen, while a set of ideological principles will keep everyone focused on the why behind the design.

Design Frameworks

While educators are always designing learning experiences, they may increasingly find themselves developing entirely new learning models as the future of learning unfolds. Teacher insights into student needs, community context, and local culture will be indispensable, but a framework to direct and safeguard the design process is key. Fortunately, there are plenty of frameworks available, each offering nuances yet all sharing common ideas.

Stanford Design Thinking

The Stanford Design model uses a cyclical five-step design process: empathize, define, ideate, prototype, and test. It promotes curiosity and humility, first and foremost. It begins with a guiding question or problem to solve. Dr. Jill Loveall, Director of Teacher Development and Learning Initiatives at ASU Prep, says empathy is the driving force.

"If I'm trying to design something to solve a community problem, I need to actually hear from the community."

Gathering input from students, staff, principals, community members, business leaders–anyone with a stake in the final design–is key. In documenting responses, designer(s) begin to see patterns and, more importantly, check their own assumptions. Was the original design challenge confirmed, or did a deeper issue emerge?

With more information in hand, the design team can more accurately define the problem (stage two) with greater clarity. Stage three is brainstorming and researching solutions, which are further refined during prototyping, which is stage four, where pilot programs or limited trials are designed. Stage five is used to test the prototype. Feedback guides decisions and refinements all along the way, often changing things drastically over time.

"I guarantee the 'first draft' is never the thing that is produced for the masses."

— Dr. Jill Loveall, ***Director of Teacher Development & Learning Initiatives at ASU Prep***

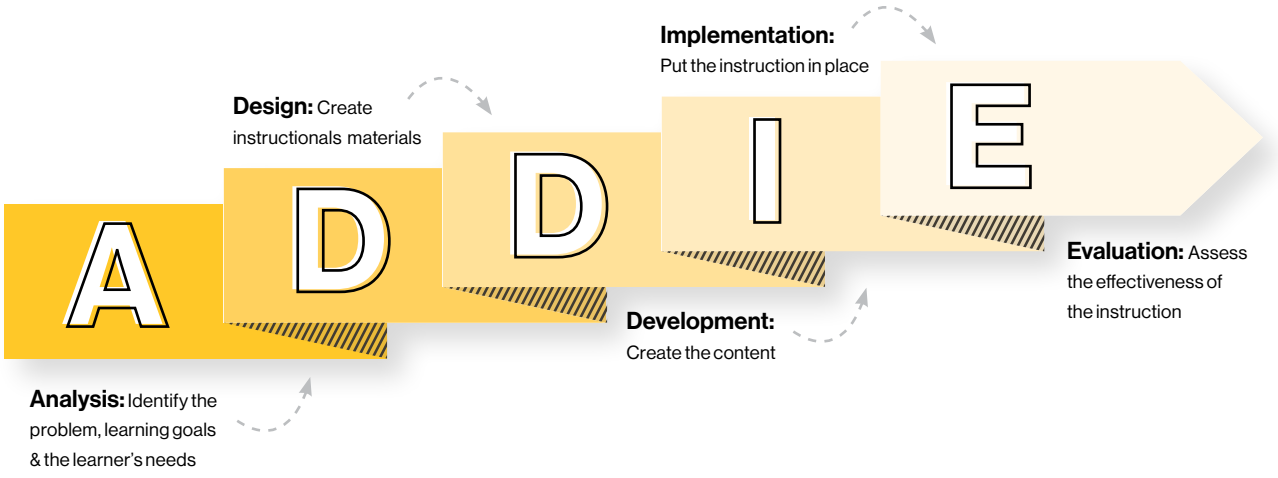
The solution's value is linked, of course, to how well it actually addresses stakeholders' needs. Iterative feedback and development cycles raise the odds that it will.

The ADDIE Model

Instructional Designers use the ADDIE model, also cyclical in nature, but tailored more to designing rich and effective learning experiences versus the Agile model, which is more focused on software.

ADDIE also begins with a discovery or "**analyze**" phase, where information about learner needs, outcome goals, community context, and prior knowledge or experience is gathered. The **design** phase establishes the research and learning theory, the learning processes (pace, cadence, instructional methods, environment, learning tools, etc.). The learner's journey is mapped and may include "branched" paths for differentiated learning.

In the **development** phase, learning activities are created and refined through feedback. Depending on the model, considerations about spatial design or use of local assets may come into play. Finally, the new model is **implemented**, and monitoring mechanisms are activated. By no means the "**end**," feedback, once again, provides continuous insights into ongoing improvements.



Common ideas in all of design approaches:

- **Deep insights into the end-user's needs**
- **A guiding outcome (or set of outcomes) to provide focus**
- **Continual testing to generate feedback**
- **An iterative process, informed by strong feedback loops**

Design frameworks bring discipline to the design process. The highly regulated world of public education is very complex indeed and can often throw design work off course. Using a framework keeps the team focused and prevents designs from being derailed.

Even then, staying the course can be difficult. In addition to a framework to inform the "how" of development, design teams also need strong principles to inform the "why."

Design Principles

To keep school designers focused on why designing new models or programs is important, Getting Smart holds to four key ideas:

1. 

Create curious, open-ended learning environments, designed around the student versus the adults.

2. 

Learning anywhere counts. Look for creative ways to reward any learning experience that demonstrates proficiency towards a set of standards.

3. 

Establish clear outcomes and goals. Ask yourself, *What is your north star?* in terms of the academic, technical, and durable skills you want students to ultimately gain.

4. 

Build school climate and culture around a growth mindset that permeates the organization, staff and students alike.

While these principles are not complex, designing for them can be. It requires continually gut-checking through questions like: *How are we supporting students in driving their own learning?* Or *How can we get learners out into the community doing things that matter?*

ASU's Principled Innovation: Designing for Human Beings

Arizona State University's Principled Innovation (PI) framework provides processes to ensure that the design work remains focused on the people it is meant to serve. The framework is one of nine design aspirations that guide ASU's work as a university. Four character domains within Principled Innovation help designers fully consider the unique human needs and aspirations relative to their work. Principled Innovation also prods designers to ask healthy questions, such as, "Just because we can, should we?"

With clarity on what stakeholders need, designers can create solutions that actually matter to all stakeholders. PI uses reflective tools to help busy educators cultivate a disciplined practice of reflection as they design.

Principled Innovation Character Domains

Moral: What values will guide us and help us check our own biases? Are we overlooking values important to the community we serve?

Civic: Are we honoring stakeholder perspectives, culture and context? Are we providing any ownership to stakeholders?

Intellectual: What data, learning, or resources support our choices? Have we included time to regularly review input, reflect, and adjust our design?

Performance: What steps are we taking to consider the consequences of our design? Is our solution actually moving the needle in a positive direction?

> **We always have a lot of work to do. It's nonstop. And if we don't take the time to be present, we are going to be doing a ton of work, but it's not necessarily going to be quality work.**
>
> **—Dr. Jill Loveall**

"Instructional leaders get so bogged down that they think, 'I don't have time for this kind of stuff'," says Dr. Jill Loveall, Director of Teacher Development and Learning Initiatives. When she hears such protests, Loveall gently pushes back. Transformational change depends on investing the time to listen, track feedback, and reflect on what it means for the end design and the people it impacts.

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Application of PI: Designing for a Learner Profile

Loveall is currently working with staff to design integrated learning experiences that support ASU Prep's Profile of a Learner. The profile outlines goals for every student in terms of durable skills, such as self-advocacy, perspective taking, empathy, ability to plan and prioritize, or collaboration skills.

To design experiences to foster these skills, Loveall helps educators reflect on where integrations already exist and where gaps remain. ASU Prep's project-based learning priority, for example, is already developing skills like planning and collaborating, but how might it also strengthen less obvious skills like empathy? The goal is for teachers to model the use of PI so that students can also use it. Rather than becoming "another thing we have to do," the PI reflection tools become a way of work and even a way of being.

Loveall notes that PI training helps leaders learn that periodic inaction is the path to better action. Stopping to reflect doesn't come naturally to leaders with bias for action, but the PI trains leaders to work and design differently. Rather than spinning 24/7 with a "laundry list in their heads," senior leaders can signal that it's okay to stop and be present.

Make It Sticky

A "sticky" design, in the world of software, is one that captures attention, evokes an emotional response, and sustains engagement over time. It often combines simplicity, relevance, and strong user appeal. When the iPhone, for example, was first released, it quickly engaged people because it was both highly intuitive and highly customizable by the user.

A sticky school model would be equally engaging and customizable by the students themselves, making them proactive players. Can it be done? A few design elements will raise the odds.

Key Elements to Make Your Designs Sticky	
Engagement: Design learning experiences that capture attention and connect emotionally, keeping students actively involved.	**Ownership:** Empower students to take charge of their learning journey, from goals to execution.
Growth Mindset: Establish a culture that normalizes failure as a stepping stone to growth and continuous improvement.	**Designer Role:** Equipt students to design their own learning paths, using tools and frameworks for planning and problem-solving.
Flexibilty: Remove rigid boundaries, allowing students to progress at their own pace and adapt to their needs.	**Support:** Provide guidance when needed, while fostering independence and self-reliance.

Flip Ownership

All of their lives, students are directed on every aspect of learning–where it happens, when they start and stop, how they learn, and how they demonstrate their learning. The Northeast Career and Technical Academy (NECTA), a unique CTE program in Las Vegas, illustrates what happens when those decisions are put into students' hands.

Principal Ryan Cordia admits that at first, students don't always know what to do precisely because they are so used to being directed by adults. Ownership over their learning journeys can be unfamiliar–even daunting–territory.

As students adjust, Cordia sees a promising metamorphosis. Recalling one girl who had completed a summer work internship, Cordia says the student was surprised to see how her own growth in self-agency impacted her internship. Each week, eight interns were given a weekly list of tasks to accomplish. Most didn't know how to go about it.

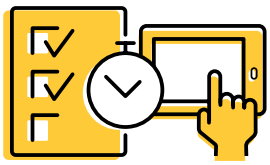
"She was the only one who could create a plan. She was the only one who could self-start," says Cordia, who says that initially this same student had pushed back against such ownership. The internship was her lightbulb moment.

"As as soon as she had to own her own day and be an adult, she realized, 'This program really helped me.'"

Cordia says that giving kids ownership is about establishing a growth mindset culture, where failure is normalized, and learning opportunities at every level of the organization are actively cultivated. For May Prince, Executive Director or Student Advisement at ASU Prep, growing self-agency in students also requires that educators know how to support the process.

"I don't think that an ownership handoff is a one and done," says Prince. Learning to ask for help when needed is something students have to practice, as are occasional failures. Instructional staff have to coach students through in-the-moment learning opportunities. Prince calls it a "one step forward, two steps back" endeavor. "It's an ebb and flow. Students are always going to need some level of support. "

As teachers provide input and resources, Prince argues "it's time to give students a little space to try things," says Prince. But her team has been trained to know when to step in.



If engagement wanes or progress slows, it's time to give students tools to reflect, identify issues, and restart.

Turn Students into Designers

"If students graduate today with only a high school diploma, they're essentially dropouts in today's workforce. In the NECTA program in Las Vegas, students design their entire learning path from day one. With guidance, coaching, and planning tools, students learn to identify the tasks and milestones relevant to their chosen programs. With support, they develop their own timelines to completion, according to their own goals or personal needs.

Giving students the reins not only increases ownership, it also turns learners into designers, and it is one of the reasons Loveall likes using frameworks like Stanford and Principled Innovation with teachers. She trains them to not just use the frameworks but to model their use, training students to use them as well. A design thinking toolkit guides students as they design their own learning goals and projects.

"The toolkit forces the kids to go through the different pieces of the design thinking process with appropriate checkpoints, where they have to stop and reflect and talk to their teacher about what they're learning and where they are in the process before they can just move onto the next step," says Loveall.

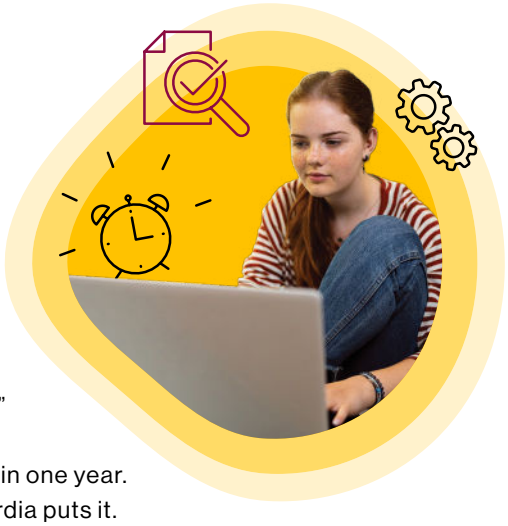
Nate McClennen describes toolkits and coaching as "strongly informed project-based learning. It makes me nervous when we introduce a project-based approach without giving learners the knowledge or skills they need to succeed in those projects."

Making design frameworks available to learners and training them to use them supports meta-cognitive growth. It also helps students learn to plan, problem solve, work together, analyze results, and reach consensus on next steps.

At the Center for Advanced Professional Studies, a profession-based learning program that originated in Kansas, K12 Liaison Allison Koelzer Nelson says that having students design their own journey is the bedrock of their program.

"Our tagline is *Where Students Lead*. We're asking the students to get in the driver's seat and explore their career and validate whether or not they want to go into it," says Nelson. By giving students real work experiences that they have a hand in designing themselves, students find out pretty quickly what resonates.

Remove Time Boundaries



At the NECTA program, time and calendar boundaries have been removed. So, in addition to choosing and designing their own program of studies, which varies by career, students also get to choose their own daily and annual learning pace.

Students are slowly awakening to both the benefits and the responsibilities that accompany such freedom.

"It took us probably until April before the kids started to really recognize that they own the system–that they're in charge of when they finish a class."

Early adopters ran with it, some students completing both English 9 and 10 in one year. Others were slower to grasp that "failure is no longer an exit option," as Cordia puts it.

In fact, some kids were so used to choosing failure that when summer break loomed and they weren't finished with a given course, their mental default was to "take the F," figuring they would just have to retake the course in the fall.

Cordia both reassured and challenged these students, "There's no bailout. There's no minimum F, bail, and then repeat next year."

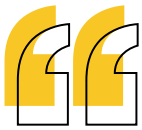
Slowly, students realized they could just keep going. *Wait, you mean I could just take a little more time and finish the parts I haven't learned yet?* Cordia assures students that they can and should keep going if they want to meet their own goals. Why would they waste time next year repeating a lot of content they already know?

Suddenly, motivation kicked into high gear and completion rates soared.

"I got 250 plus kids to finish semester classes that they normally would have failed and repeated or just taken a D at best, moving on with a ton of gaps in their learning," says Cordia. He has been pleased to see the grit and perseverance students are gaining. Rather than accept defeat and start over, which burdens master schedules and unnecessarily inflates class sizes, **students are awakening to new levels of empowerment that puts them in the driver's seat.**

Design for Better Outcomes

Mastery versus Grades



Teaching mastery is less about 'getting a grade' and more about actual demonstration of proficiency around outcomes.

At the Center for Advanced Professional Studies (CAPS) students work in immersive professional environments, where they explore careers and develop skills aligned with their interests. Through business partnerships, CAPS places students in hands-on projects, mentoring opportunities, and practical career experiences.

"We ask business partners and nonprofit organizations, 'What is the 10th thing on your to-do list? Could students take a crack at it?" says Allison Koelzer Nelson, the K-12 Liaison for CAPs.

CAPs challenges partners to give students real work that might stretch them well beyond task-based activities like data entry. "We would rather students take data and make a marketing strategy," says Nelson.

To complete work for a business, students often find they have to upskill. Coaches and mentors guide students in their work, pointing them to resources, offering feedback for improvements, prompting reflection, and teaching students to manage their projects. Students interact regularly with their client for meetings, progress check ins, approvals and sign offs–just as in any client-based relationship.

Do students always get it right? Absolutely not, says Nelson, but failure, rather than being an "end," is a strategic component.

"Students will say, 'Oh my gosh! I missed my meeting with my client!' or 'What do I do? They didn't like the draft I put together?' That is such good failure for our young people," Nelson argues. It gives them insight into the workplace, where such experiences are normal.

Embracing trial and error is a keystone of CAPS. "It's the idea that we can be resilient. We need to embody that as educators, so that the students can embody it as well."

Indeed, CAPs leaders encourage teachers to admit when the project at hand may be new to them. It's less important for teachers to be subject-matter experts than experts in helping students find the people and resources they need as they design and test solutions for business partners. Such transparency empowers students to become comfortable with the idea that professionals often make educated guesses to move forward, and that **even an initial failure can become powerful feedback for the next iteration.**

"It completely changes the dynamic," says Nelson, allowing the CAPs program to focus on a growth continuum versus grades.

As of November 2024, the CAPS network includes 100 affiliate programs across 170 school districts in 23 states and four countries. Students are doing actual work in healthcare, engineering and advanced manufacturing, business and marketing, technology and software, environmental science and agriculture, creative media and design, and in education and public service.

Give Credit Where Credit is Due

Tracking Progress and Outcomes

For any learning model, outcomes like academic performance, career-readiness, and college attainment can all be quality indicators that will identify areas for improvements. Cordia finds that tracking data carefully also helps them tell their story.

"Whenever I go to meet with, say, the associate superintendent or the State, data is power. I'm showing you not just that we're trying to do this different thing, but here's some data points of things that are working."

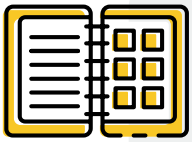
Data is power for students as well. Even very young children can set goals and track progress towards meeting them. As students gain ownership, they can also learn to see the story in the data to self-identify points of struggle and areas of strength.

Digital Learning Records

With fractional learning becoming more available, even the vice grip of the Carnegie unit is slowly loosening. Can students learn the pythagorean theorem from YouTube? Of course. Can they earn a Google IT certificate online? Absolutely. Can students learn graphic design and become Adobe Suite experts? You bet. In fact, learners already are doing these things and more–quite apart from formal classroom learning. But how can students quickly and efficiently demonstrate what they know and can do for future employers or admissions officers?

It's not a new question. The homeschool community, which has wrestled with the challenge for decades, modeled a way forward through portfolios. Yet, translating portfolios into something quick and easy to reward has always been the challenge. Technology, particularly AI, may offer a way forward.

"I just had a conversation with the founder of **Livedx**," says McClennen. "Say you have a high schooler working at a job after school. Using AI, LivedX sends [the student] through a set of prompts to uncover and extract durable skills. These skills can potentially be turned into college credit on the platform"



By stacking learning from learning outside the classroom, such as internships, personal volunteer activities, sports, or even travel experiences, students can build interesting learning stories.

Such records of "any place" learning reflect a reality about learning itself that even some higher education institutions are beginning to recognize.

"What [AI] might do is take us out of the thinking that the only way to teach is this construct called the classroom, and the only way to assess is through a set of standardized tests," says McClennen.

"It shifts how we think about credentialing," says Jean-Claude Brizard from Digital Promise, who advocates for portable learning records that not only capture learning anywhere but also belong to the student versus the institution.

The power of such proficiency indicators will only be fully realized, though, when students own the learning repository. Sometimes called a "digital wallet," a digital learning and employment record all learning credentials—from primary education throughout one's career. Brizard describes it as a "'LinkedIn' with verified credentials for life-long learning," that offers a curated portfolio of official and unofficial learning experiences to share at will.

"For example, if you're an airframe mechanic certified by the FAA, you can get a new credential for an emerging skill, like winglet installation on planes, and you can send a link to an employer showing them your updated skills. Imagine a 13-year-old collecting credentials like that throughout their education and career."

Organizations like the Mastery Transcript Consortium are actively designing digital learning repositories with the goal that they will be recognized and used by higher ed and employers alike. Indeed, many higher education institutions are part of the consortium, and interest among employers and educators alike is growing. With ubiquitous learning increasingly becoming a lifelong necessity versus a luxury, Brizard argues that such a record "allows for meandering while capturing everything."

Dr. Trista Zobitz, Director of ASU Prep Digital+, agrees. As a designer of ASU Prep's multiple microschool models, Zobitz is enthusiastic about designing unconventional learning experiences where students become co-creators in their learning journeys. But such design work comes with challenges and roadblocks.

"The more flexibility you give, the more barriers you run into, and the more you have to be really creative in breaking them down." Breaking down barriers, though, is part of any design process, requiring designers to either remove the barrier altogether or, when that is not possible, to provide learners with a way around them.

Conclusion

"School design is always iterative. It constantly needs to be re-thought and re-assessed if it's not working," says Dr. Zobitz.

For educators who may be overwhelmed by the prospect, though, Loveall likes to remind them that innovation is not the same as reinvention. "An innovation can be just a small improvement. When you are in that headspace, you can modify existing things to make them better and stronger." Feedback tools and design frameworks help educators move through incremental design cycles with fidelity. Over time, even incremental changes can create entirely new learning experiences for students.

Teaching mastery is less about 'getting a grade' and more about actual demonstration of proficiency around outcomes.

"In the world we live in with emerging technologies and social media and access to information all the time, it is very easy to lose that sense of humanity," says Loveall, "But then, at the end of the day, every decision that we're making, we have to honor that we're making [them] for people."

Yet, the work is hard. It can be maddingly frustrating and often like remodeling a home while still living in it. Prince argues that as model designers, existing systems can present continuous roadblocks, causing us to lose sight of our design goals on behalf of learners. To keep our momentum, Prince says we sometimes have to "loosen the grip" of perfection and accept that designing new models is a process.

Keeping students at the forefront makes day-to-day decisions easier, even as we continue to push the design envelope. In Prince's words, "We will never ever lose sleep over doing what's right for kids."

Take-Aways

- **Personalized Learning Fuels Engagement and Mastery:** Student-led, flexible learning pathways promote deeper engagement and mastery by adapting to individual needs and replacing grades with competency-based assessments.
- **Design Frameworks Drive Innovation:** Proven frameworks like Stanford Design Thinking and ADDIE structure the design process, ensuring student-centered, iterative, and outcome-focused models.
- **Focus on Durable Skills:** Schools must prioritize durable skills—like critical thinking, collaboration, and adaptability—through real-world experiences that prepare students for lifelong success.
- **Empowering Students Through Ownership:** Giving students control over their learning journeys, including pacing and project design, builds self-agency, resilience, and motivation.
- **Leverage Digital Learning Records:** Portable digital records validate learning from all contexts, enabling schools to recognize a broader range of student achievements and better prepare them for future opportunities.
- **Dissolve Barriers:** Design to integrate college prep, college access, career awareness, and on-the-job experience into a seamless K-20 glide path.

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