CHRISTENSEN INSTITUTE

BREAKING THE MOLD:

How a global pandemic unlocks innovation in K–12 instruction

BY THOMAS ARNETT

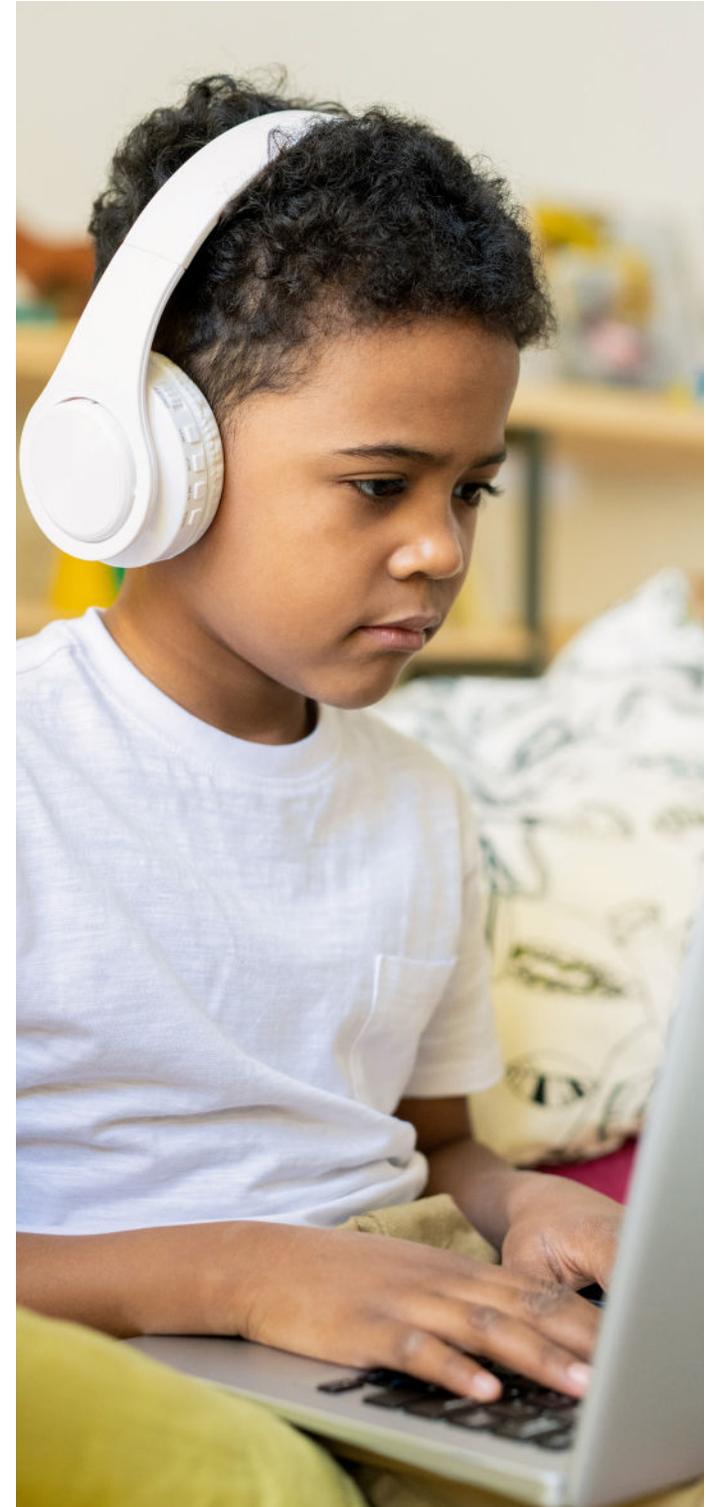JANUARY 2021

TABLE OF CONTENTS

ACKNOWLEDGMENTS

INTRODUCTION

Slowly but steadily over the last decade, online learning expanded its role within K–12 schools: many districts bought devices and upgraded connectivity, some assignments and textbooks moved to the cloud, software increasingly displaced worksheets, and internet research became a norm. Then in early 2020, the global coronavirus pandemic rocked the world—and the arc of the online learning trend bent in heretofore unimaginable ways.

Practically overnight, the spread of COVID-19 caused a sudden shutdown of classroom-based instruction—the centuries-old emblem of formal education. Fortunately, the capabilities of the technological era—in which broadband connectivity, mobile communication, and video conferencing are increasingly common—meant that for the first time in world history, schools have had a substantive way to keep learning going while brick-and-mortar school buildings are shuttered. Nonetheless, by most accounts, the transition has not been easy.

At the Christensen Institute, we've spent the last decade studying trends in online and blended learning out of interest in their potential to enable student-centered learning.[1] Yet in ways we never anticipated, COVID-19 brought these modalities to the forefront. As this new reality unfolds, we continue to document both the challenges and the innovations happening across the US K–12 landscape.[2]

As our latest work on this front, we've launched what will be a series of nationally-representative surveys of teachers and education administrators that will capture snapshots of instructional practices during the pandemic. The complete findings from our first survey, along with details about our survey methodology and sample, are available in an accompanying report.[3] This brief highlights interesting findings from the first survey, discusses trends in instructional practice that could redefine education in years to come, and offers theory-based insights and recommendations for both powering through the pandemic and evolving toward a more student-centered future.

THE FACE OF COVID-19 INSTRUCTION: CONVENTIONAL CLASSROOMS ONLINE

The data from our first survey confirms a well-documented trend during the pandemic: measures to prevent the spread of COVID-19 have made remote and hybrid instruction the new normal. What our survey uniquely reveals, however, is that many current approaches to remote and hybrid instruction aim to replicate the conventional classroom experience online.

- **Remote instruction:** All instruction happens with students and teachers in physically separated locations.

- **Hybrid instruction:** Students receive some instruction in person with teachers and classmates and some instruction remotely.

- **Synchronous instruction:** Students learn primarily through live direct instruction from teachers, often over a video call.

- **Asynchronous instruction:** Students learn primarily by engaging with online learning resources without the constraints of time and place.

Whereas classroom-based instruction is inherently a live experience, remote instruction can involve varying degrees of synchronous or asynchronous interaction. When we asked teachers how much of their instruction is synchronous vs. asynchronous, nearly half reported teaching via live synchronous instruction each day for the equivalent of a regular school day.

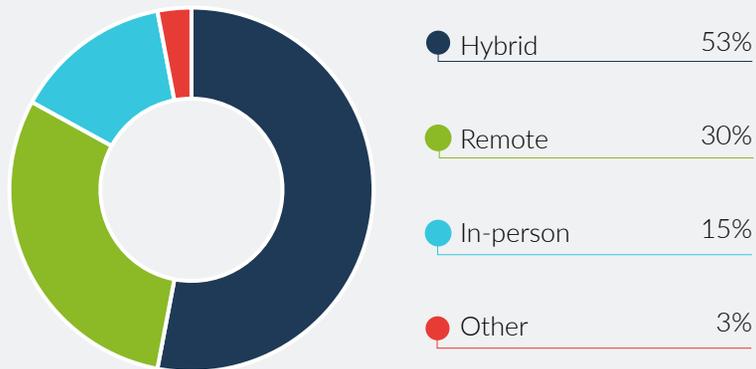Additionally, the materials and technologies teachers use tend to be those geared for synchronous instruction. Only 22% of teachers use commercial materials designed for remote instruction—which tend to cater to asynchronous learning. Instead, most teachers come up with their own resources, adapt conventional classroom curriculum for remote instruction, or curate materials from various online sources. Likewise, the technologies teachers use most are the types of technology most often used for migrating conventional classes to the cloud—such as learning management systems and video streaming. In contrast, tools for facilitating student-centered practices such as mastery-based learning and individualized learning pathways are far less common.

Altogether, the survey data reveals a striking pattern: many teachers are attempting to replicate their traditional classroom-based instruction over video calls.

> The survey data reveals a striking pattern: many teachers are attempting to replicate their traditional classroom-based instruction over video calls.

01 Hybrid and remote instruction are the new normal

Teachers' instructional settings

● Hybrid	53%
● Remote	30%
● In-person	15%
● Other	3%

02 Teachers' materials are not made for online instruction

Teachers' top sources of materials

1 Materials they develop

2 Commercial curriculum designed for classroom-based instruction

3 Various online resources

03 Many educators are replicating conventional instruction online

Teachers' common use of tech

89% Managing online assignments

72% Facilitating online polling or quizzes

84% Providing live instruction over video

56% Creating online lessons

Proportion of teachers whose daily hours of synchronous remote instruction resemble a conventional school day

42%
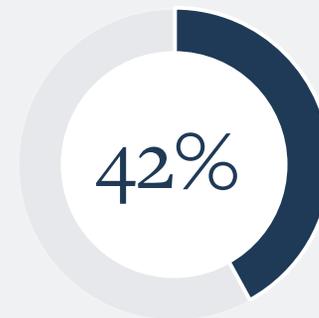
Innovation insights:

Teachers' tendency to replicate conventional practices online seems like a missed opportunity given the promising range of student-centered strategies that online learning can enable—such as mastery-based learning and individualized learning pathways. Yet this bias toward conventional instruction makes perfect sense when we consider the practical trade-offs educators face.[4] Teachers and schools are up against unprecedented challenges, and they've had little time to prepare for innovative instruction. Under these pressing circumstances, the idea of adapting well-known conventional practices for remote instruction seems far more simple and surefire than trying to discover and implement new student-centered approaches.

It's going to take more than a massive shift to remote, online instruction for student-centered practices to become widespread. Online learning can facilitate student-centered learning, but online learning is not inherently student-centered.

> Online learning can facilitate student-centered learning, but online learning is not inherently student-centered.

Recommendations:

Drawing on some of our prior research on why teachers change their practices, we see two main pathways for encouraging teachers to adopt more student-centered learning during COVID-19.[5]

The first pathway involves helping more teachers make incremental steps toward student-centered learning. As the survey results show, most teachers will tend to adapt conventional classroom-based practices for remote instruction. As they do this, however, student-centered practices can make it into their teaching repertoires if new practices offer pragmatic ways to help teachers better cover their material and engage their students. To encourage adoption of student-centered practices, administrators should offer teachers tools and practices that are easy to learn and easy to incorporate into their instruction. For example, administrators might encourage teachers to record the lessons they present during video calls and then post those lessons online where students can review the lessons at their own pace. Likewise, edtech companies should offer simple-to-use tools that help teachers enhance and share their online lessons with their students.

The second pathway involves identifying and supporting the subset of teachers who come to see conventional practices as fundamentally broken. As the challenges of the pandemic continue, some teachers will feel that they are consistently failing at meeting their students' needs. At that point, they will face a professional fork in the road. They will feel compelled to either radically change their instructional models or else make a clean break from their current teaching assignments.

If their schools and districts give them support and latitude to experiment with new approaches, they will likely take the first option and try flipping their classrooms or making their units mastery-based and student-directed. But if their schools and districts expect them to follow a rigid plan, they will likely look for options outside the district such as leading a learning pod, starting their own micro-schools, or taking a break from teaching altogether. School system leaders who create pockets within their systems where these teachers can experiment will succeed at both retaining these teachers and launching laboratories for innovative practices.

BARRIERS AND CHALLENGES: SHORT SUPPLIES OF EXPERIENCE AND QUALITY RESOURCES

Schools adopt hybrid instruction as a way to provide some classroom-based learning while maintaining social distancing requirements. In these hybrid arrangements, one might expect teachers' confidence in serving their students to go up, given that they can teach at least in part in the modality with which they are most familiar.
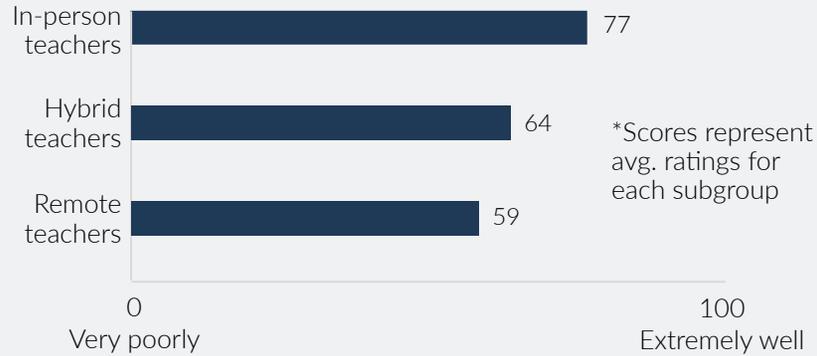
Yet when we asked teachers to rate how well they feel able to serve their students under their current circumstances, hybrid teachers reported only slightly more confidence than teachers who do all instruction remotely. Furthermore, both groups' confidence in serving their students trails considerably behind the confidence levels of teachers who are able to teach all of their students in person full-time.

The reasons teachers have diminished confidence in remote and hybrid settings likely stem from the varied challenges associated with taking instruction online. Unfortunately, a general lack of prior online learning experience contributes to these challenges. Currently, 83% of teachers teach in hybrid or remote modalities that, in most cases, require extensive use of online learning. Yet only 16% of teachers report using online learning "a lot" pre-pandemic.

We also asked teachers and administrators about the factors that most affect their current practices. Administrators report that the top factors influencing their district-wide approaches to instruction were limited planning time and lack of access to high-quality, affordable resources. Related to the challenge of finding resources, 87% of administrators said they expect teachers to use materials they develop themselves. Meanwhile, teachers' responses suggest that health considerations currently trump academic aims.

01 Hybrid instruction is almost as challenging as remote instruction

*How teachers report their ability to serve students**

Subgroup	Score
In-person teachers	77
Hybrid teachers	64
Remote teachers	59

0 Very poorly — 100 Extremely well

*Scores represent avg. ratings for each subgroup

02 Teachers' inexperience with online learning is likely a major hurdle

Proportion of teachers who regularly use online learning

- Fall 2020 — 83%
- Pre-COVID-19 — 16%

03 Districts had to juggle several challenges in order to operate this fall

Top factors influencing how districts provide instruction

1. Need to set programs up quickly
2. Quality of technology and programs available for purchase
3. Course development and/or purchasing costs
4. Concerns about equity

04 Challenges related to health requirements dominated teachers' approaches to instruction

Top factors impacting teachers' instructional models

1. District-wide plan for COVID-19
2. Social distancing requirements
3. Sanitation requirements
4. Local health guidance
5. Testing and accountability
6. Required instructional minutes
7. Special education accommodations

Innovation insights:

When districts task teachers with creating their own resources and curriculum, that expectation has a cost. Eighty-five percent of teachers indicated that they spend more time on preparation and planning now than they did last year. Unfortunately, when teachers have to spend more time creating, curating, and adapting materials for remote instruction, it means they have less time for things like connecting personally with students and their families, or learning best practices for remote instruction or student-centered learning.

Recommendations:

One practical way to curtail teachers' planning and preparation burden is to provide them with materials well-suited for remote online instruction.[6] Accordingly, schools and districts should prioritize adopting new curriculum and platforms designed for teaching online.

States and foundations can play a key role in helping districts overcome the challenge of finding and adopting high-quality, affordable resources for remote learning. First, they can take stock of where resources are lacking and then fund the creation of resources to fill those gaps. Second, they can support efforts to review materials based on how well they work for remote online instruction, which will make shopping for remote learning materials easier.[7]

INNOVATION OUTLIERS: PROMISING SIGNS OF STUDENT-CENTERED LEARNING

Although many educators seem to be replicating classroom instruction online, initial survey data reveals small but promising indicators of student-centered practices.

For example, a majority of districts offer students tutoring services in conjunction with remote learning. Roughly a third of respondents also indicated that their districts have arranged for physical learning hubs.[8] Additionally, a third reported that their schools use online learning platforms that offer adaptive practice activities, and a fifth reported that their districts arrange opportunities for students to interact virtually with mentors.
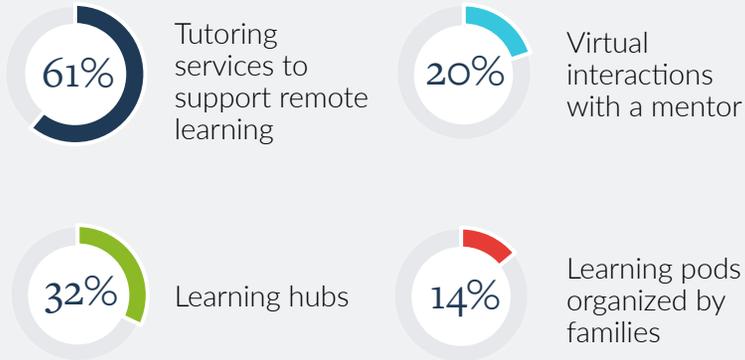
Some teachers are also finding ways to use technology to both build relationships with their students and make learning more individualized. More than half (51%) of teachers report using video calls to connect with their students in small groups or one-on-one. With the variety of new challenges students and their families face during the pandemic—from arranging time and space at home conducive to remote learning, to dealing with health, employment, and child-care challenges—these check-ins with students matter now more than ever.

Additionally, roughly a third of teachers also use technologies that support student-centered learning practices such as creating individualized learning progressions, facilitating project-based learning, helping students practice new skills with adaptive learning software, enabling mastery-based learning, and keeping track of individual students' learning progress.

When it comes to helping new tools and practices stick, effective professional development (PD) seems to be a key ingredient. When the survey asked hybrid and remote teachers to report their sense for how well they are able to serve their students, those who felt confident with online tools and those who felt they had received effective PD were substantially more confident than hybrid and remote teachers generally.
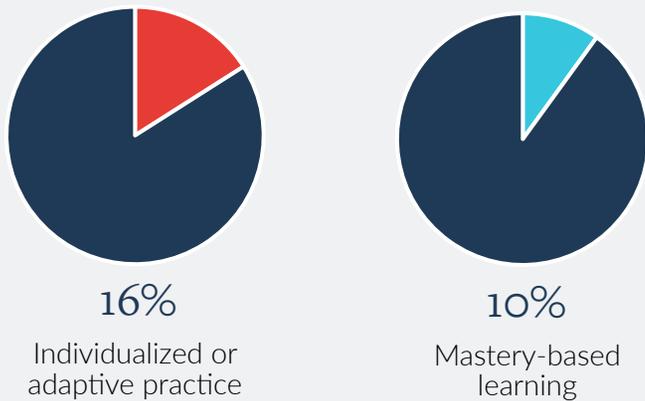
> When it comes to helping new tools and practices stick, effective professional development seems to be a key ingredient.

01 Students in a number of districts have access to innovative programs

Programs available to support learning

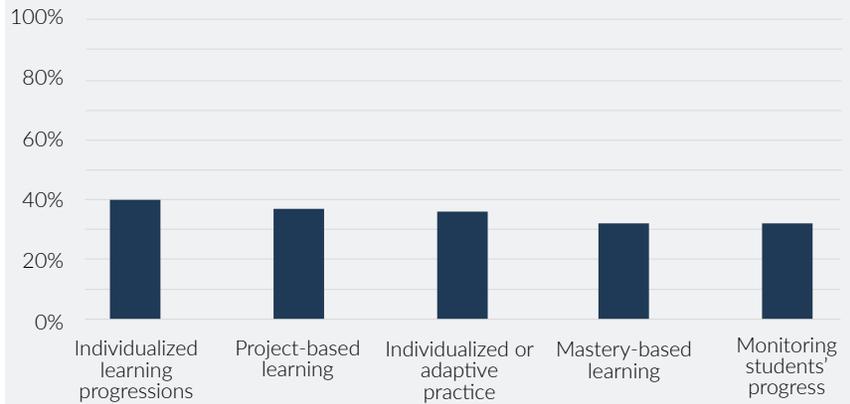**61%** Tutoring services to support remote learning

20% Virtual interactions with a mentor

32% Learning hubs

14% Learning pods organized by families

Online platforms to facilitate instruction

16% Individualized or adaptive practice

10% Mastery-based learning

02 A number of teachers use technologies and practices that make learning more personal for their students

Technologies used to support student-centered instruction

Bar chart categories: Individualized learning progressions, Project-based learning, Individualized or adaptive practice, Mastery-based learning, Monitoring students' progress

03 Professional development can boost how well teachers feel able to serve their students

*How remote and hybrid teachers report their ability to serve students**

	Score
All remote/hybrid teachers	62
Those confident with online tools	70
Those who received effective PD	71

0 Verly poorly — 100 Extremely well

*Scores represent avg. ratings for each subgroup
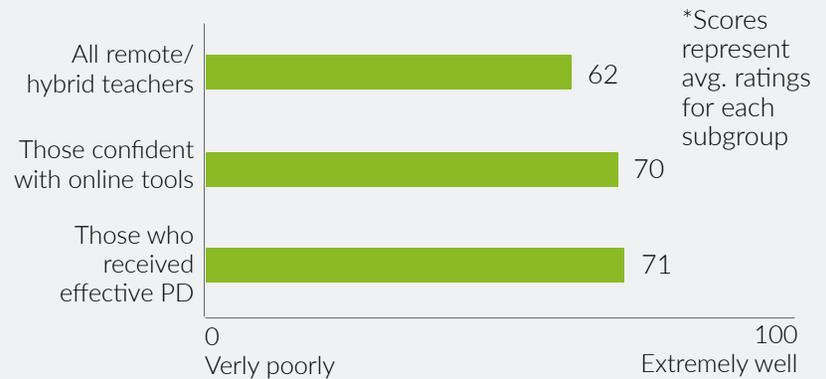
Innovation insights:

Given the challenges associated with switching from conventional to student-centered practices, especially during the stress of a pandemic, the degree to which schools and educators are using student-centered practices is encouraging. These innovation outliers likely exist for one of two reasons. First, some schools, districts, and teachers were already implementing these strategies and practices pre-pandemic and simply continued using them. Second, to some degree the pandemic may be putting pressure on schools' organizational models in ways that are catalyzing change. We will be eager to test these hypotheses by seeing how use of student-centered practices changes over the course of our future surveys.

Recommendations:

Now that educators have cleared the hurdle of getting school up and running during a global pandemic, administrators, policymakers, and philanthropies should look for ways to seize this moment to encourage student-centered practices.

For the school systems where pockets of student-centered practices already exist, administrators should help those innovations grow. One simple starting point: increase educators' access to the resources that support student-centered practice—such as quality curriculum designed for remote instruction, adaptive learning software and assessment tools, and learning management systems that support mastery-based progression.

Access to resources alone, however, does not guarantee changes in practices.[9] To help teachers shift to student-centered practices, administrators need to also provide them with PD that makes adopting student-centered learning more manageable. First, any teachers who are early adopters of student-centered practices can train and coach willing colleagues. Second, organizations such as Modern Classrooms Project provide online PD to help educators adopt effective distance learning

Districts can encourage teachers to earn competency-based micro-credentials to take incremental steps toward student-centered practices.

practices.[10] As a third option, districts can encourage teachers to earn competency-based micro-credentials as a way to take incremental steps toward student-centered practices.[11] Digital Promise and Bloomboard both offer micro-credentials designed specifically for student-centered teaching.[12]

For the majority of school systems where remote instruction takes a more conventional bent, leaders who influence policy and funding play an important role in encouraging schools and educators to adopt student-centered practices. First, they can introduce policies that align schools' priorities with student-centered practices—such as relaxing required instructional days and minutes and developing assessment and accountability systems that prioritize student well-being and growth in mastering content. Second, they can offer funding to help schools purchase new resources and develop new processes in line with student-centered practices. For example, leaders could fund access to online learning systems that help schools track student learning growth on an ongoing basis. Or they could provide financial incentives for teachers who pursue micro-credentials designed for student-centered learning.

THE FUTURE OF EDUCATION: NEW TOOLS AND VIRTUAL SCHOOLS

Although many student-centered practices only show up among relatively few teachers and school systems, a few trends in the data point to major shifts in the K–12 landscape.

First, a majority of teachers report that they've discovered new resources or practices that they plan to continue using after the pandemic. When the survey asked respondents to detail the resources and practices they plan to keep using, many described tools and practices for creating online lesson materials and managing online content and assignments.

Second, district virtual schooling options have increased dramatically as a result of the pandemic. And it's worth noting that most of the districts offering full-time virtual options report that their virtual schools are district-operated and taught by district teachers, not outsourced to third-party providers.

**01** Increases in offering full-time virtual school programs could be a promising trend for K–12 education

Districts with virtual school options

● Fall 2020   69%

● Pre-COVID-19   27%

02 Most teachers have discovered resources and practices they plan to keep using after the pandemic is over

Proportion of teachers who have discovered new resources or practices they plan to continue using after the pandemic

79%
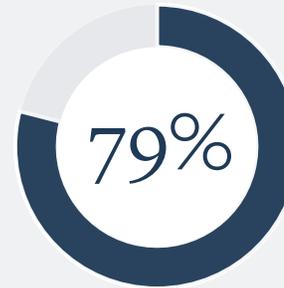
Innovation insights:

Most resources and practices teachers adopt right now for remote instruction are not inherently student-centered. But increased use of these resources and practices opens a pathway to more student-centered practices in the future. Here's how that pathway can unfold.

At first, teachers will use online tools just to improve how they deliver lessons over live video—for example, adding visuals to their lessons and administering exit tickets and quizzes online.[13] But once lessons are happening online, it isn't hard to record those lessons and then post them to a learning management system so that students who are absent or who need extra review can access them. And once content lessons are available on demand, it's a small step to start flipping instruction: reserving live instruction for discussions, practice problems, or collaboration on projects while directing students to learn foundational content by watching lessons on their own time. When lessons and activities are posted online, it becomes feasible to allow students to move through content and assignments for a given unit at their own pace.

Just as learning new tools can be the starting point for major innovations in teachers' practices, new district virtual schools can be laboratories for innovation in districts' offerings. Most teachers, students, and families will be eager to go back to conventional classroom-based instruction as soon as safely possible. But according to a survey commissioned by the National Parents Union, nearly two-thirds of parents are eager to see schools develop new approaches to instruction.[14] Full-time virtual schools that operate independently from the practices and stakeholder expectations of existing brick-and-mortar schools can be the innovation hubs where districts continue to experiment.

District virtual schools launched during the COVID-19 pandemic could evolve over time into student-centered models of schooling that eventually replace conventional instruction.

Recommendations:

Districts that have not done so already should consider setting up a full-time virtual school option for students and families. In the short run, such a school can meet the needs of families who want more flexible asynchronous learning or who don't feel comfortable returning to in-person schooling any time soon. In the long run, these schools can be catalysts for innovation within a district.

Importantly, however, these schools need certain conditions in place to fulfill their innovative potential.[15] First, district virtual schools need to be independent entities with their own leadership and staff structure. If they are set up as a branch of an existing school, their processes and resource allocation decisions will end up needing to conform to the norms and priorities of the established schools. Second, they need visionary leaders who have both a personal passion and a mandate from the district to improve how they serve students. These leaders need to be people who are excited to figure out things like individualized learning pathways and mastery-based progression. Third, they should work in partnership with the districts' conventional schools to give students benefits that neither conventional schools nor virtual schools alone can offer. For example, the virtual school can provide supplemental courses to students in conventional schools while conventional school partners can offer virtual school students opportunities to participate in campus-centered activities such as sports, performing arts, social gatherings, and some elective courses.

With the right conditions in place, district virtual schools launched during the COVID-19 pandemic could evolve over time into student-centered models of schooling that eventually replace conventional instruction.

CONCLUSION

This survey is just the first in a series of surveys we plan to conduct on K–12 online and blended learning practices over this school year and next. We hope and expect that through the course of the pandemic, as difficult as present circumstances may be for schools, necessity will prove to be the mother of invention. We expect that as schools and teachers get through this winter, they will discover and repeat a set of basic processes and practices for keeping their heads above water as much as possible. Then, over time, industrious educators will continue to tinker with, improve upon, and invent new practices and strategies that allow them to better serve their students. As this process plays out, we will be eagerly watching to see if the pragmatic solutions educators adopt also veer toward more student-centered learning.

NOTES

1. In 2008, Christensen Institute co-founders Michael B. Horn and Clayton M. Christensen published *Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns.* In this book, they predicted that online learning would disrupt conventional models of K–12 instruction and that by 2019 roughly 50% of all high-school courses would be online in some form. Following the publication of *Disrupting Class*, the Christensen Institute continued to study the disruptive potential of online learning by documenting the rise of blended learning: an instructional modality that incorporates online learning into brick-and-mortar classrooms. That research led to the publication in 2014 of *Blended: Using Disruptive Innovation to Improve Schools* by Michael B. Horn and Heather Staker. Over the last few years, the Institute has continued to document the many variations of blended learning, the policy and organizational barriers that affect its adoption, and the opportunities it offers for enabling student-centered instruction to become more widespread. This survey and report represent our latest efforts to continue studying the phenomenon of online learning in this new context of a global pandemic.

2. For additional research and insights on how the COVID-19 pandemic affects K–12 innovation, see the following: Chelsea Waite, "New data reveals a unique picture of school innovation in a challenging year," September 28, 2020, Clayton Christensen Institute, https://www.christenseninstitute. org/blog/new-data-reveals-a-unique-picture-of-school-innovation-in-a-challenging-year/; Chelsea Waite and Thomas Arnett, "Will Schools Change Forever? Predicting How Two Pandemics Could Catalyze Lasting Innovation in Public Schools," Clayton Christensen Institute, October 20, 2020, https://www.christenseninstitute.org/publications/school-change/; and Thomas Arnett, "Successful Decision-Making During Uncertainty: Four Pathways for School System Leaders," Clayton Christensen Institute, October 26, 2020, https://www.christenseninstitute.org/publications/district-decision-making/.

3. To learn more about this survey, see "Fall 2020 National Online and Blended Learning Survey," Clayton Christensen Institute, December 2020, https://www.christenseninstitute.org/wp-content/uploads/2020/12/OnlineBlendedLearning_data_2021.pdf.

4. For more on this topic, see Waite and Arnett, "Will Schools Change."

5. See Thomas Arnett, Bob Moesta and Michael B. Horn, "The Teacher's Quest for Progress: How School Leaders Can Motivate Instructional Innovation," Clayton Christensen Institute, September 12, 2018, https://www.christenseninstitute.org/publications/teachers-jobs-to-be-done/.

6. As a general principle, educators and administrators should look for ways to use technology and other resources to expand educator capacity. For more on this idea, see Thomas Arnett, "A New Framework to Unlock Edtech's Potential for Teachers," Clayton Christensen Institute, December 11, 2018, https://www.christenseninstitute.org/blog/a-new-framework-to-unlock-edtechs-potential-for-teachers/.

7. For additional insights on how to support districts in adopting quality curriculum, see Thomas Arnett and Bob Moesta, "Solving the Curriculum Conundrum," Clayton Christensen Institute, March 2020, https://www.christenseninstitute.org/wp-content/uploads/2020/05/Curriculum-Conundrum-3.16-update.pdf.

8. These learning hubs are entrepreneurial responses on the part of districts to the family-organized "pandemic pods" that sprang up over the summer. For additional information, see Anya Kamenetz, "'Learning Hubs' Offer Free Child Care and Learning—But Only for a Lucky Few," National Public Radio, September 1, 2020, https://www.npr.org/2020/09/01/906663624/-learning-hubs-offer-free-child-care-and-learning-but-only-for-the-lucky-few.

9. For more on this point, see page 12 of Waite and Arnett, "Will Schools Change."

10. Professional development from Modern Classrooms Project is available at http://learn.modernclassrooms.org/.

11. One of our recent papers discusses in depth the potential for micro-credentials to accelerate shifts toward student-centered learning. See Heather Staker, Thomas Arnett, and Allison Powell, "Developing a Student-Centered Workforce through Micro-Credentials," Clayton Christensen Institute, September 8, 2020, https://www.christenseninstitute.org/publications/student-centered-educator-competencies/.

12. The following organizations offer micro-credentials through the Digital Promise platform focused on student-centered learning: The Modern Classrooms Project, Institute for Personalized Learning, Friday Institute at NC State, and Digital Promise & Verizon Innovative Learning Schools. These micro-credentials can be found at https://microcredentials.digitalpromise.org/explore. Ready to Blend also offers a series of micro-credentials on student-centered learning through Bloomboard that can be found at https://www.readytoblend.com/micros.

13. Exit tickets are short quizzes teachers give students to complete before they "exit" a class session. They help teachers and students gauge whether students have understood the material covered in the class session.

14. See Beth Hawkins, "New Poll Finds Parents Want Better Distance Learning Now, Online Options even after COVID, More Family Engagement," The 74 Million, November 17, 2020, https://www.the74million.org/article/new-poll-finds-parents-want-better-distance-learning-now-online-options-even-after-covid-more-family-engagement/.

15. For additional insights on how to set up virtual schools as laboratories for innovation within a district, see Thomas Arnett, "Districts Disrupted," AASA, October 2019, http://my.aasa.org/AASA/Resources/SAMag/2019/Oct19/Arnett.aspx.

About the Institute

The Clayton Christensen Institute for Disruptive Innovation is a nonprofit, nonpartisan think tank dedicated to improving the world through Disruptive Innovation. Founded on the theories of Harvard professor Clayton M. Christensen, the Institute offers a unique framework for understanding many of society's most pressing problems. Its mission is ambitious but clear: work to shape and elevate the conversation surrounding these issues through rigorous research and public outreach.

About the author

Thomas Arnett is a senior research fellow in education for the Christensen Institute. His work focuses on innovative instructional models enabled by online learning and the role of disruptive innovation in transforming K–12 education. He holds a BS in Economics from Brigham Young University and an MBA from the Tepper School of Business from Carnegie Mellon University, where he was a William G. McGowan Fellow.