

DATA EVOLUTION IN THE CLOUD

Data Forges the Way Forward in Education

LEARNING BEYOND DISRUPTION

As educational institutions around the world shut down to avoid the spread of COVID-19, in-person schooling was one of the early casualties of the pandemic. Students and teachers scrambled to move learning online, disrupting learning in K-12 as well as in higher education. Low-income students without access to technology were disproportionately affected: According to UNICEF, at least a third of the world's schoolchildren—463 million children—were unable to access remote learning when COVID-19 closed their schools.¹ And a TCF study said public educational institutions everywhere had to quickly build online learning systems while being chronically underfunded and lacking proper resources.²

At the same time, educators showed tremendous initiative, learning new technologies and creating new lesson plans on the fly. Schools researched and implemented educational apps to create personalized learning experiences for students. According to a Brookings article, in India, one state's government deployed thousands of teachers to connect with parents and deliver learning materials and weekly assessments through WhatsApp on their mobile phones.³ A few months into the pandemic, students were able to access virtual field trips to museums, historical sites, and even volcanos, according to WeAreTeachers.⁴

A survey of the educational systems of 59 countries by the Organisation for Economic Co-operation and Development (OECD) and Harvard University said, "The crisis has revealed the enormous potential for innovation that is dormant in many education systems. The results of this survey show a considerable capacity for innovation in education. One of the lessons that needs to be examined and assimilated is what processes unleashed such potential and how can such innovative capacity be extended going forward."⁵

But schools everywhere still grapple with limited resources and chronic underfunding. How can they leverage the potential for innovation while operating with tight budgets? One way is to access information that delivers insights into what's working for students, as well as what's not working, so they can make better, data-driven decisions on new initiatives.

The future data landscape is the focus of a recent survey, conducted by The Economist Intelligence Unit and sponsored by Snowflake, of 914 global executives across eight industries, including 111 from the education sector. It finds that education sector respondents ranked highest of industries citing **lack of technical capacity** as the biggest challenge to their organization's ability to collect data (by 27% versus a survey average of 22%). Education sector respondents said that after data privacy regulations (41%), the biggest challenges to their organization's ability to draw insights from data are **lack of accurate data** (32%), **barriers to data sharing between different departments** (25%), and **lack of internal talent to build technical capacity** (24%). For educational organizations grappling with limited resources, being able to use data to develop innovative learning experiences for students will be key to thriving in the post-pandemic world.

27%

of education sector respondents cite **lack of technical capacity** as the biggest challenge to their organization's ability to collect data.

DOING MORE WITH LESS

Schools can use data in many ways to improve their students' educational experience. According to the Bill & Melinda Gates Foundation, leadership teams can make more-informed decisions about how educators can teach and support students.⁶ In addition, teachers can analyze students to develop optimal education strategies,⁷ and K-12 schools can use data analytics to measure student success, engagement, and learning,⁸ according to EdTech: Focus on K-12. Sourcing and sharing data is important for utilizing data-driven insights for strategic purposes. But in a sector where budgetary constraints are always top of mind, data sharing can be an expensive proposition. Data silos exist on many levels—between school departments, educational institutions, and outside parties such as governmental funding agencies—because many entities in the system struggle with outdated legacy systems. In addition to citing the lack of technical capacity as their biggest challenge to collecting data, our education sector respondents ranked highest among industries citing the **high cost of sourcing or sharing data** as their biggest challenge with regard to sourcing or sharing data with external parties (by 36% versus a total survey average of 26%).

Meanwhile, education sector leaders believe there are many opportunities for their organization that open up when they have access to data-driven insights for strategic purposes. The biggest opportunity is **increasing the satisfaction and experience of the customer/client—in the education framework, that's the student**. Among all of the survey respondents, education sector respondents ranked highest of industries saying **improving digital capabilities** is the biggest opportunity (by 31% versus a survey average of 25%). According to Gartner, "Most companies are flying 'data blind' with regard to the skills they need for transformation and the supply, demand, availability and location of those skills."⁹ Our education survey respondents agreed: One of the biggest challenges to their organizations' ability to draw data insights was lack of internal talent to build technical capacity.

FIGURE 1: What is the biggest opportunity for your organization when it comes to utilizing data-driven insights for strategic purposes?

(% of respondents selecting each option)



Source: The Economist Intelligence Unit



Snowflake Customer:



The University of Notre Dame, one of the top 30 universities in the U.S., improved its data sharing and data access capabilities with Snowflake.¹⁰

“Because of Snowflake’s performance and speed, the security model works flawlessly, and we can provide restricted and unrestricted data access to everyone.”

—CHRIS FREDERICK, Business Intelligence Manager, University of Notre Dame

Photo by Barbara Johnston/University of Notre Dame

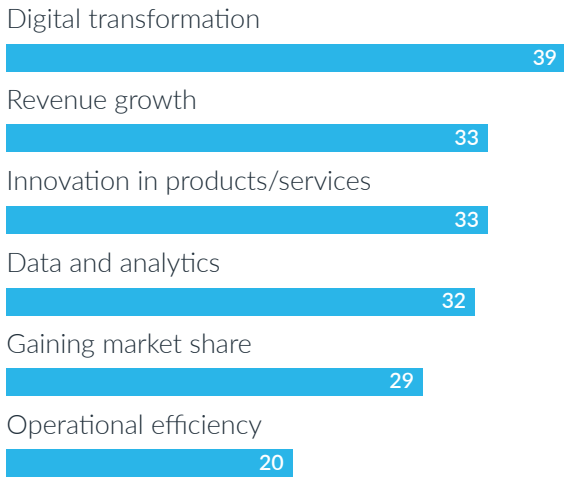
INNOVATING THE WAY FORWARD

To prepare students for the future, schools need to bring forth new ideas and learning strategies. A Brookings Institute report says the pandemic provides an opportunity to “harness innovation to leapfrog education toward a more equitable and relevant learning ecosystem...The COVID-19 pandemic has forced education innovation into the heart of almost every education system around the globe.”¹¹ Similar to how they use data to improve students’ learning experiences, schools can use data to develop novel programs and techniques that enhance learning. Data collection and analysis is key to assessing these initiatives. In Sierra Leone, for example, UNICEF deployed a new tool to assess children’s literacy skills. Gaining such information helped students, parents, and communities engage decision-makers at all levels and hold them accountable.¹²

Our education sector respondents say **innovation in products/services** is one of the top three priorities that will be most critical to their organization’s success over the next three years, in addition to **digital transformation** and **revenue growth**. Digital capabilities will be important in gaining the technical infrastructure needed to collect data and turn it into actionable insights. The right data strategy is also key: Education sector respondents ranked highest among industries saying their top priority for their organization to enhance its data capabilities over the next three years should be **developing or updating their data strategy** (by 44% versus a survey average of 36%). The survey points to a connection between digital transformation, data, and innovation: Education leaders see digital transformation as an important way to acquire data capabilities that will help them innovate and succeed in the future.

FIGURE 2: Which of the following priorities will be most critical to your organization’s success over the next three years?

(% of respondents selecting each option)



Source: The Economist Intelligence Unit

33%
of education respondents say innovation in products/services will be critical to their organization's success over the next three years.



Snowflake Customer:



The University of Sydney, Australia’s first university, was able to generate up-to-date reports within minutes, enabling new insights from complex queries that can spur innovation.¹³

“The team can now ask questions of data sets in ways that could not be done prior to Snowflake. Multiple large sets from different sources can be readily combined and sophisticated queries run in a matter of minutes.”

—CHRISTY CLARK, Associate Director Institutional Analytics, University of Sydney

PRESSING THE RESET BUTTON

The pause in routines caused by the COVID-19 pandemic has given educators the opportunity to press reset and discover new solutions to old problems. In education, the way forward must involve creating new, better ways for students to learn, while learning how to do more with less. Data and technology can help to harness the energy and initiative of educators to provide innovative learning methods. At the same time, they can help maximize positive outcomes while minimizing resource expense, establishing a more effective and efficient educational system overall.

¹ uni.cf/3sXLIBW

² bit.ly/3lOm2Sj

³ brook.gs/3t4h1eb

⁴ weareteachers.com/best-virtual-field-trips/

⁵ globaled.gse.harvard.edu/files/geii/files/education_continuity_v3.pdf

⁶ gates.ly/3qmRWcQ

⁷ bit.ly/3ehv0JG

⁸ bit.ly/3c5vC28

⁹ gtnr.it/2OfLx6g

¹⁰ bit.ly/3cgGZVh

¹¹ brook.gs/3qmXz10

¹² uni.cf/38mnqd0

¹³ bit.ly/3kXIV9d