

# Teaching & Learning



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Like all educators,  
our mission at Microsoft  
is to empower every  
student on the planet  
to achieve more.

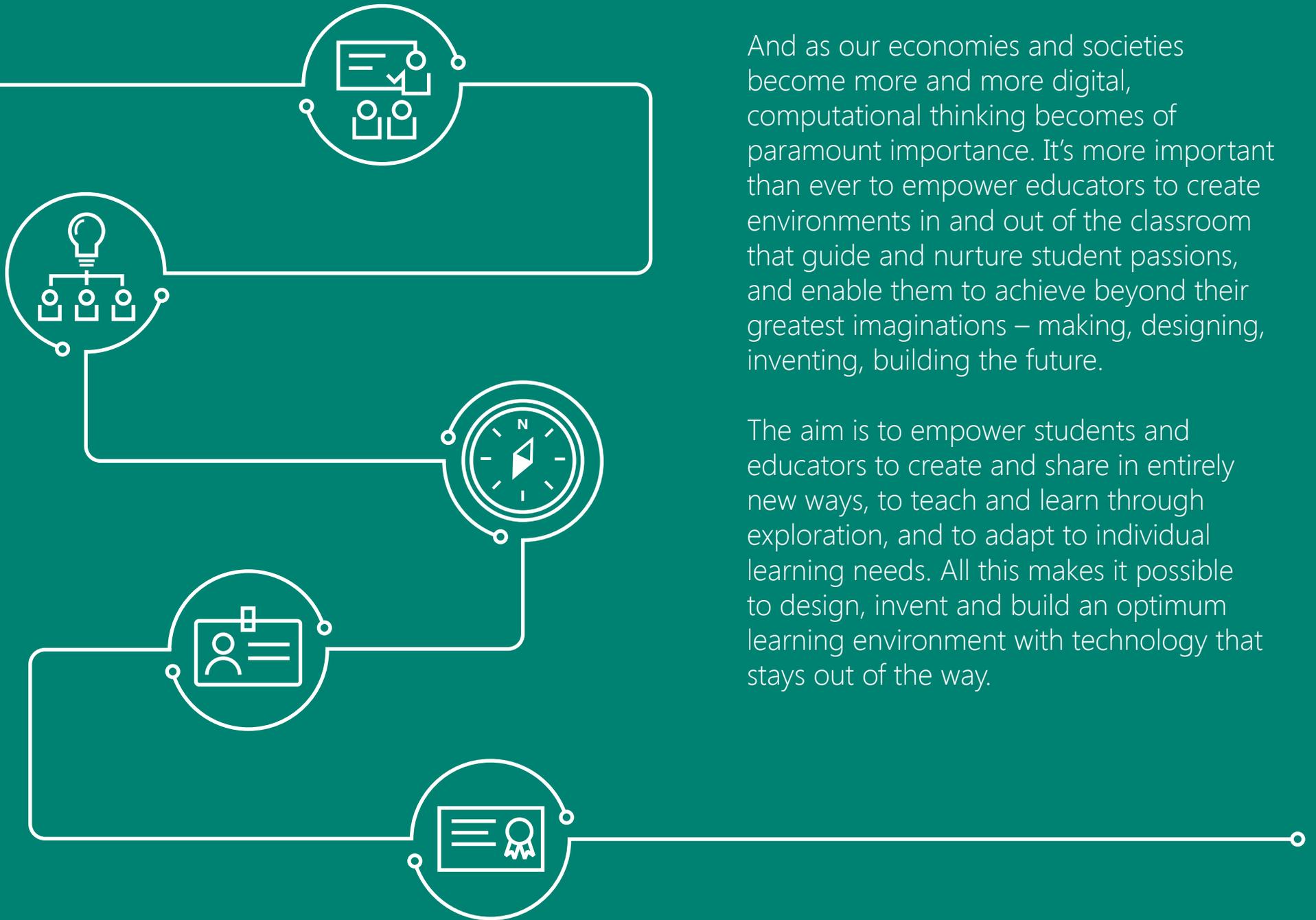
We were founded  
on the principle  
that people can  
do remarkable  
things when  
technology is  
within their reach.



Together, we can build the literacy and problem solving skills they need to succeed today and tomorrow.

This e-book reflects our commitment to partnering with educators on their journey to redefine learning. Core to our mission is creating immersive and inclusive experiences that inspire lifelong learning. For students, this experiential learning stimulates the development of essential life skills like communication, collaboration, critical thinking, and creativity.





And as our economies and societies become more and more digital, computational thinking becomes of paramount importance. It's more important than ever to empower educators to create environments in and out of the classroom that guide and nurture student passions, and enable them to achieve beyond their greatest imaginations – making, designing, inventing, building the future.

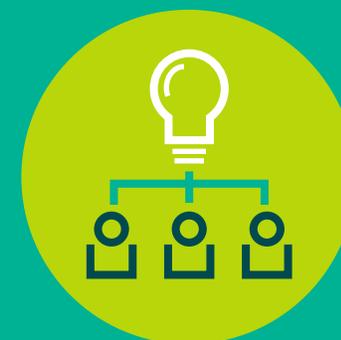
The aim is to empower students and educators to create and share in entirely new ways, to teach and learn through exploration, and to adapt to individual learning needs. All this makes it possible to design, invent and build an optimum learning environment with technology that stays out of the way.

Teachers and students can maximize results by creating optimum learning experiences that are immersive and inclusive.

There are four high-impact strategies for achieving this:

- Create and share in entirely new ways
- Teach and learn through doing and exploring
- Accommodate individual learning needs
- Focus on outcomes, not technology

In this e-book, we'll first explore the global education challenges facing us today. Then we'll dive into these four strategies for creating optimum learning experience, and offer the best solutions available to put those capabilities in the hand of teachers and student alike. Throughout, we'll also look at relevant case studies.



# Global education challenges



There are 1.4 billion students in the world. Of those, **more than 72 million remain unschooled.**

**4** out of  
**10**

Fully 4 out of 10 out-of-school children will never enter a classroom.<sup>1</sup>

**Over 250 million children**

either don't make it to fourth grade, or don't learn reading, writing and math, even after four years of school.<sup>2</sup>

The global youth unemployment rate is now **13 percent**

These facts point to a number of insights. First, you have an immense amount of students around the world, many of which are deprived of a formal education. And, if they do experience some form of education, the data shows that the world is falling short in fulfilling a basic commitment to youth to provide a full and complete learning experience, one that goes beyond just a few years. Stoking the fire is a double-digit unemployment rate.



The hope to improve upon global education efforts lies with an army of educators – 65.2 million around the world – dedicated to teaching and creating exceptional learning experiences.

Unfortunately, in many countries, their army is relatively small, with chronic shortages of teachers. Today, at least 74 countries face an acute shortage of teachers.<sup>3</sup>

Although that trend appears to be improving in many countries as teaching recruitment has ramped up, the current environment begs a few questions:

- How do we get the most teaching power from so few?
- Put another way, how can we maximize the capabilities of the teachers we do have to impact the greatest number of students in the best possible way?
- And how do we create the optimum learning experience for students?

These four strategies can help answer these important questions and more...



Create  
and share  
in entirely  
new ways



Teaching is about creating, innovating and cultivating curiosity. Having easy access to new and different ways of experiencing the world can go a long way to nurturing that curiosity.

In order to inspire students to achieve more, there must be multiple ways to create a learning experience that fosters:

- Collaboration with students and colleagues
- Access to familiar and easy-to-use productivity and research tools
- A platform for creating and sharing interactive class materials, lessons, presentation, projects and more
- An interactive way to communicate and share experiences with other educators, experts, and students around the world
- Tools and games for developing specializing learning, such as computational thinking skills

From the educator's perspective, it's also important to have tools that help keep the classroom and lesson plans organized, including curriculum delivery.

## Product Spotlight: Mystery Sway

Sway is a digital storytelling app that helps teachers and students create interactive designs in minutes using images, text, video and other media. Parents and others can view Sway presentations on any device – no additional software or sign-in needed. And you can change privacy settings for more control.

[Read more](#)



## Barnier Public School uses Sway to spur collaborative learning:

"The ability to create interactive presentations – quickly – makes it far easier for teachers to devise differentiated classroom experiences. This helps us deliver individualized programs."

"Students instinctively use Sway to connect lesson material to the real world, and the result is some wonderful presentations. Engagement is up and this is driving better outcomes."

[Learn more](#)



Teach and learn  
through doing  
and exploring



It's a known fact in the education universe that students learn best from experience, from doing, from using their senses.

Exploring their environment – people, things, places, events – creates an active learning experience that imprints on their brains. First-hand and concrete experiences, as well as immersive activities, such as storytelling, connecting with other cultures in an interactive way, and other forms of inclusive lessons, can have positive and a life-changing impact on students.

This active engagement with people, things and ideas promotes mental activity that helps retain new learning, and promotes integration with what they already know.

Today's education landscape must empower educators and students to teach and learn through doing and exploring. While great technology can never replace great teaching, it is essential that schools have access to the right tools that will help drive the most effective learning. Technology applied in new ways can shift behavior and motivation – enabling

educators to assess learning in new ways, and supporting students as they learn to be adaptable and resilient through exploration, simulation and gaming. The goal is to encourage students to learn through doing – solving problems, practicing, progressing and having fun, with real time feedback from educators.



It was once said: "Tell me and I forget, teach me and I may remember, involve me and I learn." This illustrates the notion that tactile experiences are still one of the most effective ways to learn.

A concrete example of that insight is recreating these types of experiences through apps. For example, we've partnered with some of the best educational app partners to make pen-to-paper style experiences like FluidMath and StaffPad available on Windows – bringing subjects like math and music to life in new and effective way for students.

"One must learn  
by doing the  
thing, for though  
you think you  
know it – you  
have no certainty  
until you try."

-Sophocles, 5th c. B.C.

# Going beyond active learning.

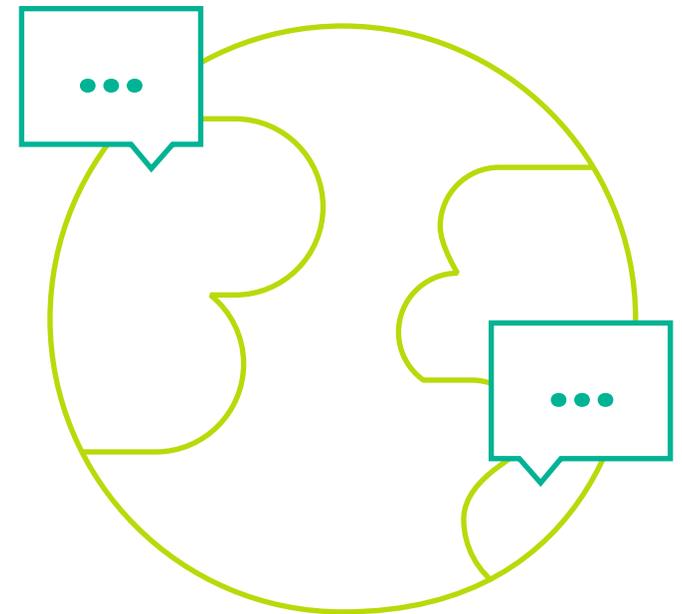
The term “active learning,” introduced by English scholar R.W. Revans, was popularized in the late 1990’s by a report from the Association for the Study of Higher Education (ASHE).<sup>4</sup> The report emphasized that students must do more than just listen, and that activities must be engaging and help them develop problem-solving skills. Active learning engages pupils in doing things, and thinking about the things they are doing. It is essential that schools have access to the right tools that will help drive the most effective learning.

Technology applied in new ways can shift behavior and motivation – enabling educators to assess learning in new ways, and supporting students as they learn to be adaptable and resilient through exploration, simulation and gaming. The goal is to encourage students to learn through doing – solving problems, practicing, progressing and having fun, with real time feedback from educators.

Traditionally, educators have employed active learning techniques by focusing on reading, writing, discussion, or engaging in problem-solving activities. While these basic activities do move students away from passivity toward engagement, there are new and immersive tools and technologies available today that can dramatically boost the excitement level in a classroom. These learning tools can create energized and motivating learning experiences that students may very well leverage into adulthood.

Previous generations learned about the world through books, films, and pen pals from other countries. Today, students are able to travel around the world right from their classrooms. For example, Skype in its purest form is a communication and collaboration tool. But when viewed with a different lens, a classroom in Washington, can take a virtual field trip to a classroom in Mexico City, so participants can learn from each other, in real time, regardless of the languages they speak.

The ability to talk with experts about specific research or share lessons related to music, art, computer science and history, whatever their unit of study, gives students the real-time, real-life perspective they otherwise might not get. It’s truly learning without borders.



# Fact:

With passive learning, the amount of information retained by students declines substantially after ten minutes.<sup>5</sup>

# The Minecraft effect.

New education platforms based on the gaming universe that today's youth know very well brings true active learning experiences to students around the world. For example, Minecraft is one tool that has the power to transform learning on a global scale. By creating a virtual world and then exploring in it, students can simulate the real world.

Using tools like Minecraft, younger students learn:

- Digital citizenship
- Empathy
- Social skills
- How to improve their literacy

Older students explore more complicated humanities questions, while also learning basic engineering and programming skills.

Classrooms around the world are currently using Minecraft, and are bringing a focused kind of enthusiasm to the learning experience. Students who consistently use such technology tools, which task them to work collaboratively to solve problems, are generally:

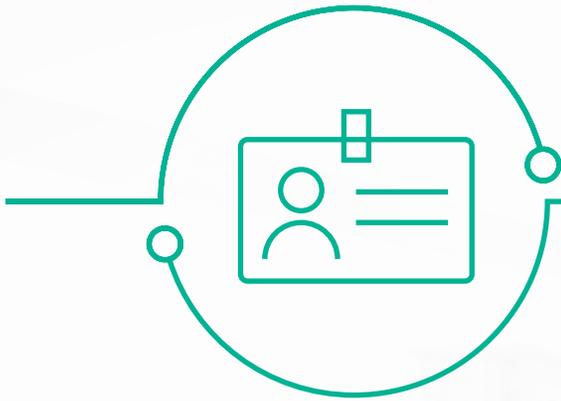
- Motivated
- Engaged
- Confident
- Energized

## Product Spotlight: Mystery Skype

The global guessing game that gets kids learning about geography, culture, and the similarities and differences of how children live all over the world.

Fifth grade teacher Scott Bedley uses Skype to connect and engage with other classrooms around the world. By playing Mystery Skype, students learn to use technology and gain a global perspective.

[Read more](#)



# Accommodate individual learning needs



While teaching students naturally caters to the group as a whole, educators never lose sight of the fact that each one of their pupils is an individual, and some individuals have unique and distinct needs, or learn in a different way than others.

The ability to accommodate a student with specific needs is a continual process that requires a willingness to use a variety of resources to find the best path to learning.

It's vital to have easy access to adaptive tools and experiences that empower educators and students to accommodate individual learning needs. Simply put, there is no single "right way" to learn that applies to all. Educators should have the freedom and flexibility to teach for their students in a way that allows them to:

- Track and instantly adjust progress.
- Create a learning experience in a way that suits them
- Make learning more personal and productive.

Of course, there are many ways to use technology to personalize learning and achieve these objectives, making learning more inclusive and accessible. For example, Windows supports:

- Assistive learning experiences like digital pen for visual thinking
- Touch for tactile learning
- Text-to-speech for visually-impaired students
- Speech-to-text for hearing-impaired students



# Product Spotlight: OneNote

With Microsoft OneNote, teachers can create notebooks that help them stay organized, deliver curriculum, and collaborate with students and colleagues.

Named the first top Dyslexia App of 2016, the Learning Tools for OneNote help improve reading and writing skills, including gifted learners, students with learning differences or a combination of any of the broad range of unique student abilities.

[Read more](#)



## Data analytics and teaching

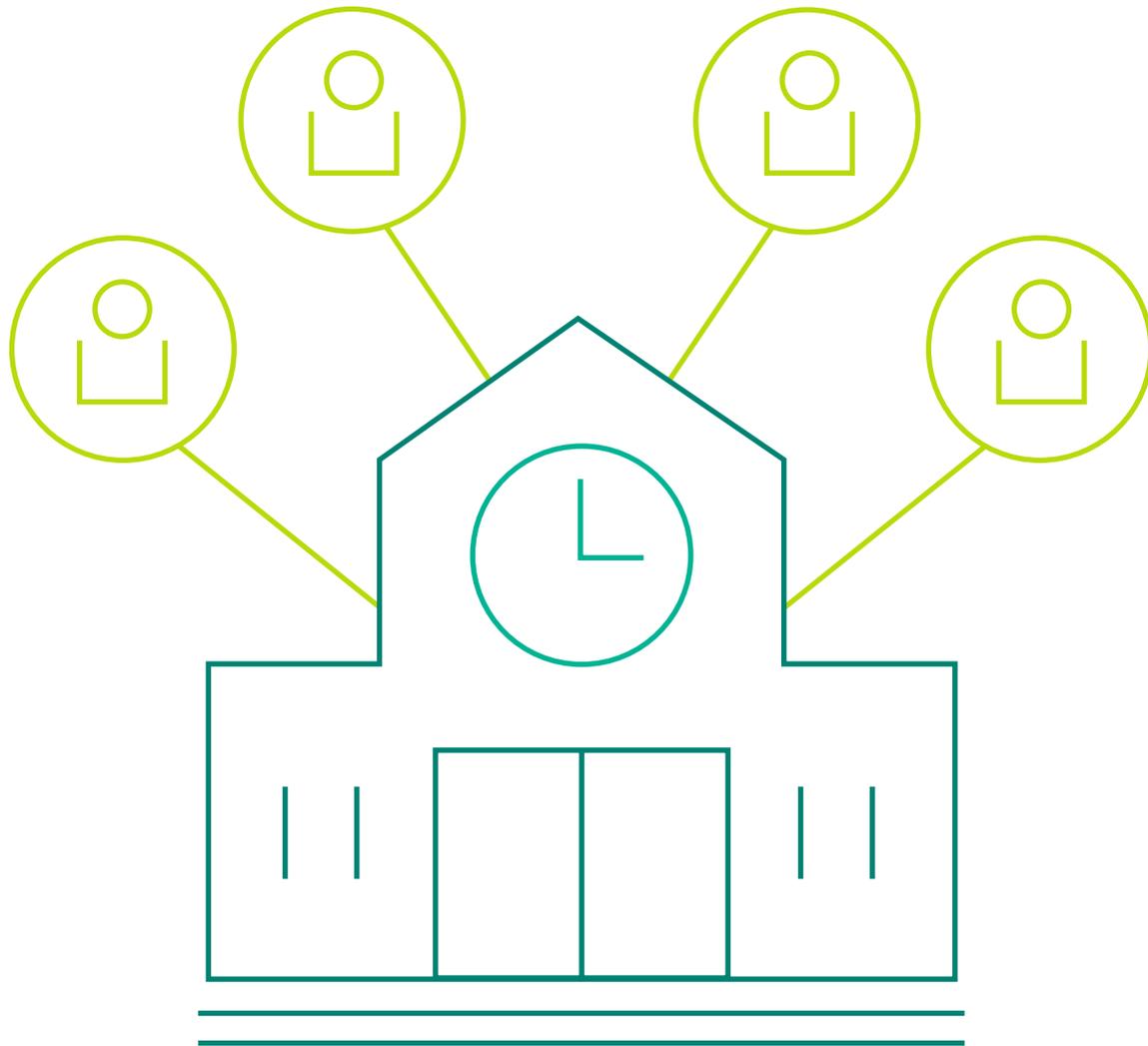
A growing and exciting trend in education is the use of data analytics tools in the educator toolbox. When used to its full potential, this technology can help educators use data to greatly improve learning outcomes, especially with pupils that have distinct needs.

Education data analytics can help educators:

- Shape a lesson or learning experience to an individual
- Offer students timely feedback
- Gauge the impact of a particular lesson
- Simplify how a pupil's performance is tracked
- Predict a trajectory for a student's future performance
- Pinpoint how and where to intervene with academic support, if needed

Best of all, today's data analytics tools are easy-to-use with little or no training required for educators to be able to take advantage of this technology.

In fact, technology helps educators take some "time" out of the equation **so they can do what they do best: teach.**



# Join the Microsoft Educator Community!

Teaching can sometimes feel like a lonely job, but there's a whole community of colleagues out there to support you, provide resources, and offer ideas. The Microsoft Educator Community website is our effort to give you a single place to get training, find lessons, connect with others, share your expertise, and more.

[Join now](#)



Focus on  
outcomes,  
not  
technology



Finally, technology in the classroom should be transparent, empowering educators and students to focus on learning outcomes.

This means providing learning experiences built on simplicity, robust security and privacy. Simplicity lets educators focus purely on the learning of their students, while security and privacy features help to nurture a worry-free, safe environment.

For example, some helpful features and tools to consider that meet these criteria could include:

- Single sign-on, so educators can access all learning material from any device, online or offline
- Configurable tools to help protect student information – helps to block damaging malware and undesirable content and apps
- Education tools that help manage how students use devices in the classroom
- Access to lesson and work anytime, anywhere, on any device – Web, PC, Mac, iOS and Android

## Product Spotlight: Windows 10

Windows 10 Education provides powerful learning experiences with a wide range of tools for education. The education-ready Windows Store has a broad selection of apps to provide rich resources for researching, teaching, and learning.

The Windows 10 Anniversary Update delivers new innovations for your classroom. This includes tools for faster and easier setup for shared devices, the new Take a Test app for secure assessments, workspaces for digital ink including a digital ruler, digital sticky notes, and more.

[Watch here](#)



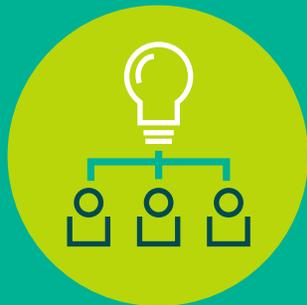
# Why Microsoft?



We've explored the global challenges for education today, and four teaching strategies that can greatly contribute to an optimum learning experience.

As you've learned, technology plays a critical role in each of these areas, and Microsoft has developed a suite of products ideally suited to help educators employ these four strategies in the classroom, effectively and easily. A specific set of MS products have been identified that fit well with each strategy.

Best of all, administrators and educators can pick and choose those products that work best in their classroom to be able to easily and effectively execute each strategy...



### Create and share in entirely new ways

- OneNote
- Office 365
- Sway
- Skype
- Microsoft Edge
- Office Mix
- Kodu Game Lab



### Teach and learn through doing and exploring

- Skype
- Minecraft
- OneNote
- Windows 10
- Microsoft Surface
- Windows Store



### Accommodate individual learning needs

- Windows 10
- OneNote
- Skype
- Office 365
- Microsoft Educator Community



### Focus on outcomes, not technology

- Access to all learning materials from any device
- Office 365
- Access to a breadth of Windows devices for every need and every price point

# Get Started

If you're a college or university administrator, and would like to employ these four strategies in your classrooms for an optimum learning experience, all it takes is three steps...

1

Identify your priorities.

2

Choose solutions that best fit the needs on your campus.

3

Talk with your Microsoft rep who can connect you with the right partners.

## Sources and references

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