

THE SCIENCE & TECH BEHIND

# NEXT-GEN EDUCATION

Over **9 IN 10 EDUCATORS** are interested in the benefits of tech

## THE CLASSROOMS OF THE FUTURE

### What Do Educators Think?

Think that **interactive video\*** is going to be important to education in the future **98%**

Anticipate **self-paced curriculums** **98%**

Believe video will play an important role in the **personalization of education** **98%**

Are interested in **VR/AR/360 video** **89%**

\*In which content changes depending on viewer behavior

### The Benefits Of Tech



**GREATER REACH**  
1 in 3 education professionals see video as a way to reach students who don't have access to classroom learning



**AI REVOLUTION**  
From 1995 to 2014, use of IT more than doubled in OECD countries, and it's still growing - students need digital skills to succeed



**LIFELONG LEARNING**  
More than ever students will need the ability to continue learning new skills throughout their lives



**DIVERSE CAREERS**  
1 in 3 15 year-olds plan to pursue one of the top 10 most popular occupations, regardless of whether they'll continue to be in demand

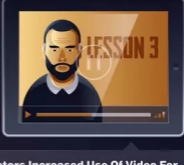
**86% of educators** think students need **video capture skills** to succeed in their future workplace

Technology provides a way to show students a wider range of opportunities

## USING VIDEO TO MAXIMIZE CLASSROOM TIME

### Educational Institutions Say Video Increases

**91%** **82%** **80%** **80%**



### From 2014 To 2019, Educators Increased Use Of Video For



CAPTURING CAMPUS EVENTS



STUDENT ASSIGNMENTS



PERSONAL INTRODUCTIONS IN ONLINE LEARNING



FLIPPED INSTRUCTION



FEEDBACK ON ASSIGNMENTS

### What Is It?

#### TRADITIONAL TEACHING

##### IN CLASS

Teachers review homework and present new content



#### FLIPPED FOCUS

##### OUT OF CLASS

Students learn new content through video & tech

##### OUT OF CLASS

Students do homework to practice new learning



##### IN CLASS

Students discuss and explore applications

##### INSTRUCTION

Student-centered **35%**

Teacher-centered **65%**



##### INSTRUCTION

Student-centered **80%**

Teacher-centered **20%**

### Benefits Of Flipping

- Increases student engagement, which in turn improves learning outcomes
- Learning is more collaborative, helping students build soft skills
- Teachers lead students to investigate ideas and guide self-discovery

### Potential Drawbacks

- Classrooms are may become more active, noisy, and distracting
- Students may have trouble focusing in a flipped learning environment
- Flipped instruction must be executed well to reap the benefits

**18%**

### Left Behind

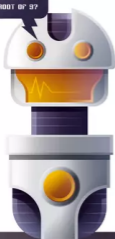
IN THE U.S., NEARLY 18% OF SCHOOL-AGE CHILDREN DON'T HAVE INTERNET ACCESS AT HOME — MEANING THEY CAN'T DO HOMEWORK, ESPECIALLY IF IT RELIES ON TECH

Public libraries, schools, and corporate donors are working to provide wireless hotspots to students in need

Installing WiFi on school buses lets rural students take advantage of longer commutes

## CHATBOTS FOR EDUCATION

WHAT IS THE SOURCE ABOUT BY?



### How Chatbots Improve Learning

#### SPACED INTERVAL LEARNING

- By reviewing material repeatedly over time, student are better able to remember what they've learned
- Software algorithms can predict when you'll start to forget what you've learned and time reminders to optimize memorization

#### IMMEDIATE FEEDBACK

- Learners who receive feedback immediately show greater improvement than those who get delayed feedback
- Teachers can't always grade an essay, but an AI can — AI can even score papers within 92% accuracy, compared to human graders

#### SELF-PACED LEARNING

- Chatbots can track student performance and adjust the curriculum to better meet their individual needs
- Chatbots serve as a guide to help pace learning, not a replacement for a teacher or professor

$$c^2 = a^2 + b^2$$

$$\pi = 3.14$$



$$i = \sqrt{-1}$$

WCHT LESSON

$$\Delta s = 0$$

#### SNATCHBOT

Free chatbot that can be embedded in learning platforms like Blackboard

Can be programmed with answers to FAQs relating to course syllabus

Provides answers with links and images to help guide students through the course

Gives students immediate answers and relieves teachers' email load

#### SUMMIT LEARNING PROJECT

Chatbots adapt learning to each student, enabling self-paced learning

Acts as a virtual tutor that notes students' trouble spots and adjusts to their needs

Teachers can focus on creating lessons, while chatbots take over pacing and assessment as students move from one lesson to the next

#### JILL WATSON

Chatbot built on IBM's Watson and trained using data from the course's forum

Created by Asok Goel at Georgia Tech, and added to an online course as a teaching assistant — Students had no idea Jill was really an AI

Jill answers routine, technical questions — Like "Where do I find \_\_\_?"

### Communicating With Parents



Tools like Facebook Messenger & Remind help teacher and staff communicate with parents and older students outside of the classroom



BUT, they can also provide answers when aren't available to chat

Preprogrammed answers to routine inquiries

Auto replies to messages outside of office hours

## THE FUTURE OF EDUCATION, PERSONALIZED THROUGH TECH

#### SOURCES

- remind.com
- snatchbot.me/education
- files.eric.ed.gov/fulltext/EJ1151444.pdf
- oecd.org/education/Empowering-the-future-of-education-and-jobs.pdf
- interactiveschools.com/blog/chatbots-can-they-work-for-your-school
- blog.digitarm.com.au/how-messenger-bots-are-being-used-in-education
- blog.interactiveschools.com/blog/chatbots-can-they-work-for-your-school
- elearningindustry.com/chatbots-in-education-applications-chatbot-technologies
- edutopia.org/blog/tips-providing-students-meaningful-feedback-marianne-stenger
- disability.illinois.edu/sites/default/files/Spaced%20Interval%20Learning%20Technique.pdf
- peeweeok.org/fact-talk/2015/04/20/the-numbers-behind-the-broadband-homework-gap
- corp.k12usa.com/wp-content/uploads/2018/07/The\_State\_of\_Video\_in\_Education\_2018-1.pdf
- qz.com/688048/a-professor-built-an-ai-bot-to-make-teaching-easier-will-it-replace-him-someday
- venturebeat.com/2018/05/28/chinese-schools-are-testing-ai-that-grades-papers-almost-as-well-as-teachers
- iaac.org/iss/2018/4\_is\_2018\_44-52.pdf?bcd4=4wARZk8GFy02y0z7HEpYhSkjw3E5dInnRDC68FwJ\_MwME35-68Gk
- usnews.com/high-schools/blogs/high-school-grades/articles/2017-10-02/how-to-help-high-schoolers-without-home-internet-access

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