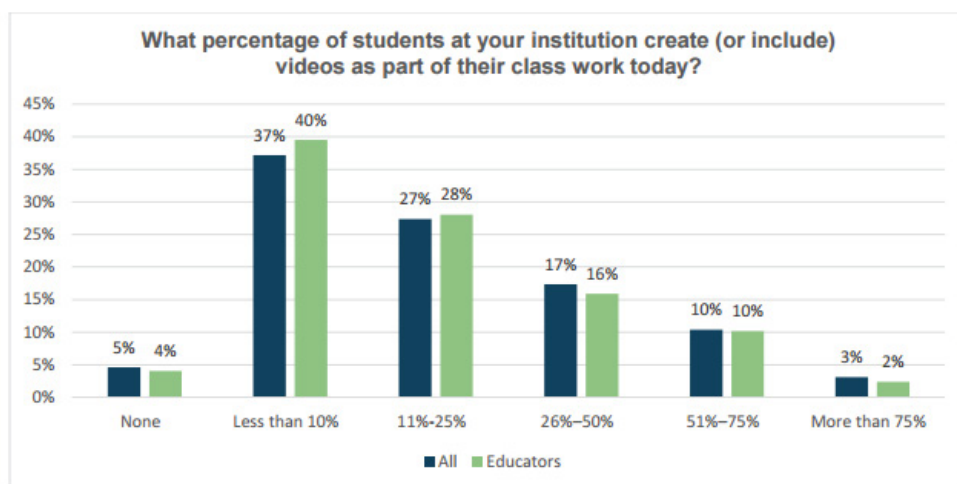**Kaltura**

Kaltura White Paper

Using Interactive Video to Improve Learning Outcomes

Using Interactive Video to Improve Learning Outcomes

When video first appeared, there was great hope for its potential to revolutionize education. As early as 1933, the University of Iowa started its own TV broadcast. In 1952, expecting an outpouring of educational programs, the FCC created 242 noncommercial channels. All too soon, though, TV was dubbed the "idiot box" and the "boob tube". Classroom film strips and videos became a chance to teachers to catch up on their grading and students to tune out. When online learning appeared, some declared it was one more step towards the complete depersonalization and fatal watering down of education.

But now new interactive tools in video are bringing about a revolution in education, helping teachers engage more deeply with students and students engage more richly with the material. Increasing numbers of teachers are regularly incorporating video into their classes. Discover how advanced video techniques are helping to enrich and strengthen educational programs around the world today.

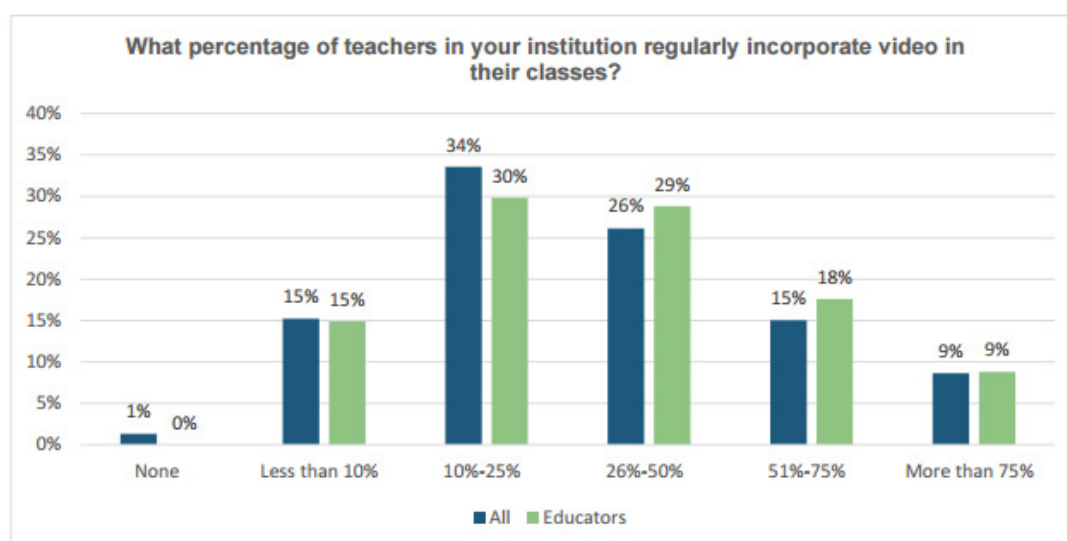*Source: Kaltura State of Video in Education 2015 Report*

1. Video personalizes education.

Humans are wired to prefer face-to-face contact. We're visual creatures, with a large chunk of our brain devoted to processing facial expressions. So when given a choice between text, audio, or video, many people will pay more attention, understand more easily, and more a deeper emotional connection to material presented via video.

The most obvious use for video is distance learning. Whether live streaming or recorded video, online video instruction is being employed by institutions ranging from MOOCs all the way down to elementary school districts. But while it used to make sense to limit video instruction to expensively filmed formal lectures, technology has changed. As cameras have improved and bandwidth has increased, now everyone has devices in their pockets capable of playing and recording video. Personal rich media capture software such as Kaltura's CaptureSpace has made it simple to create sophisticated, multi-stream video synched to presentations or screen captures. Perhaps even more importantly, as a society, we've become accustomed to not only consuming video, but communicating through it. Today's students are not only accustomed to video communication, they have grown to expect it.

As the barriers to entry have fallen, video is becoming a way for teachers to engage more personally with students, even the ones they see regularly in the classroom. Only a few years ago, fewer than 10% of assignments involved video, and most of those were confined to video-centric topics such as media studies. Now, not only do professors regularly give out video assignments, they often give the instructions to the assignment via video. Lab TAs explain how to use laboratory equipment, science teachers conduct demonstrations, even explanations of how to use new software is routinely done with video. One professor we know of makes it a point to give off-the-cuff feedback to his students through short videos he records from his laptop from his office or his home. He's already made hundreds of

them. Video gives teachers the ability to give more visual instructions and lessons, while revealing their warmth and humor to their students. It also allows students to interact with their teachers in a more personal fashion.


What percentage of teachers in your institution regularly incorporate video in their classes?

	None	Less than 10%	10%-25%	26%-50%	51%-75%	More than 75%
All	1%	15%	34%	26%	15%	9%
Educators	0%	15%	30%	29%	18%	9%

Source: Kaltura State of Video in Education 2015 Report

Video is not just limited to the classroom, either. Only a generation or two ago, students were sent to dusty encyclopedias and atlases to learn about the world around them. Now, students can watch local news reports from around the globe in real time. They can follow along as someone explores the Great Wall of China or the Amazon River. They can talk to other schoolchildren from around the world, meeting them face-to-face. Through livestreaming and web conferencing, it's suddenly easy to have an exchange program without leaving the classroom. When video is so easy to produce and share, students can go literally anywhere, riding along in someone's back pocket. The world we know is so much smaller and more personal than even a decade or two ago, thanks to video.

Helpful tips:

- Don't limit video instruction to long form, formal content. Try using portable devices or personal capture software like Kaltura CaptureSpace to make short videos for more easily understood explanations or more personal touches. Try giving assignments, providing short explanations of isolated concepts, or offering personal feedback to go with grades. It doesn't have to be long—sometimes shorter is better! 71% of respondents to our State of Video Education Survey 2015 say videos should be no longer than 10 minutes.
- Encourage your students to reach out via video. When office hours are intimidating or inconvenient, video comments can help you understand the challenges your students are facing. Seeing the problems a student is having with a lab or a problem set may make it easier to address, but may be more convenient than trying to find a mutually acceptable meeting time.
- Be creative in using video in and out of the classroom. Take advantage of video's ability to bridge gaps in space and time to make far away concepts more immediate. Using video can allow your students to watch events through locals' eyes, allowing them to experience the world in a less filtered way.
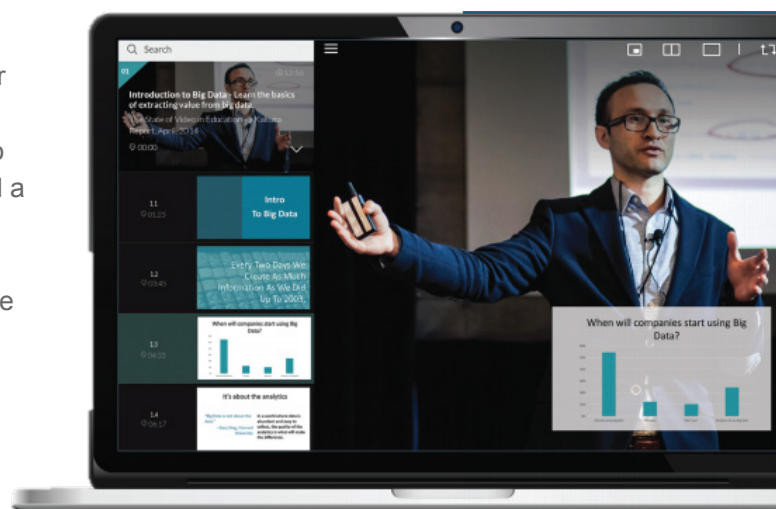
2. Video helps students and faculty be more collaborative

The quality of interactive video has been increasing. Video conferencing no longer requires special set-ups; nor is it characterized by the choppy, grainy footage of the past. It's now possible to chat with someone on the other side of the planet from your phone or laptop while sitting on your living room couch. Services like Skype or Facetime have become routine ways of communicating with friends, family, and coworkers. More formal collaboration tools such as Webex, Adobe Connect, and Blackboard Collaborate make it easier than ever to work together even when you're not in the same room.

One of the biggest keys to collaboration is communication, so every step that increases communication makes collaboration that much easier. Whether because collaborators are separated by oceans or because it's 2am and raining and no one wants to leave their dorm room, video communications can be the next best thing to being there in person.

Sometimes, it's better. The ability to easily record meetings, including facial expressions and screen captures, makes long term projects easier to track and manage. When meetings get recorded, though, it's critical to have a way to find that information again. Automated captioning, in-video search, and central repositories all can make collaborations more productive by making it easy to store, access, and search meeting recordings later.

Helpful tips:

- Sometimes a two minute chat is better than ten emails. Hop on a video call and just show people what you're talking about instead of wasting time emailing back and forth.
- It's easier to work with people when you have a sense of them as a person. When collaborating with distant peers and students, take the moment to see people's faces and make a personal connection.
- Recordings are useless if you can't find them again. Make sure your platform of choice not only records your meeting, but stores it somewhere accessible. Ideally, it should integrate with your central video management system, so you can access all information from one place. Automated captioning enables both accessibility and in-video search, so people can easily find information later. Take it a step further if you're a global institution or serving multi-lingual populations, and add subtitles in multiple languages as well.

3. Video makes learning more engaging.

In an ideal classroom, the educator knows all of the students, and engages with each of them on an individual level. Shy students are coaxed out of their shells. Everyone is asked questions and given chances to respond.
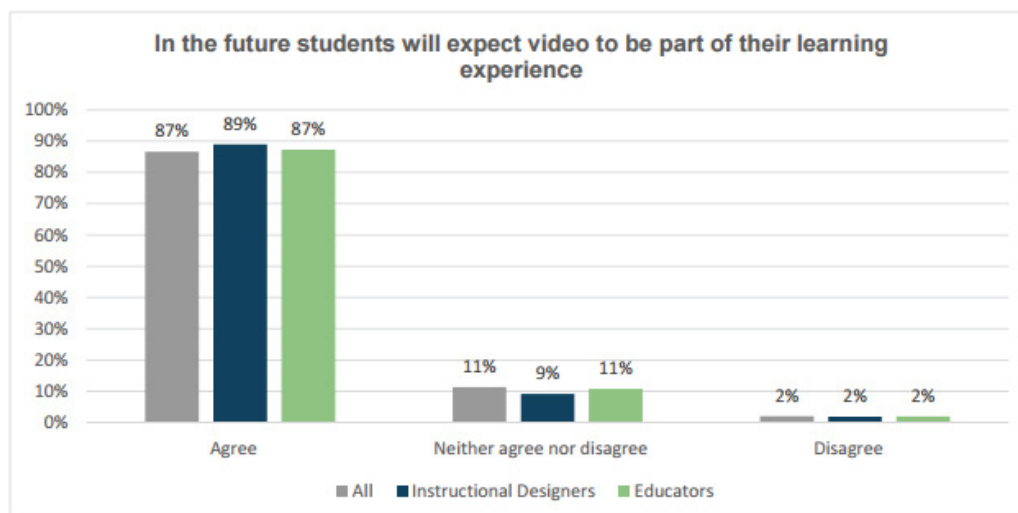
In reality, that's not always realistic. Some students really are very uncomfortable speaking in public, and when forced will underperform. Some classes are just too big for a professor to keep track of who has spoken up and who has not.

Oddly enough, offering video as an alternative form of communication can alleviate some of these problems. When students are asked to respond via video, it becomes much easier to keep track of who has spoken and who has not. It also makes it possible to showcase the quieter students who easily get lost in a big class but who may have equally valuable contributions as their more voluble peers.

It's also important to remember that today's students have grown up in a video-saturated world. They're used to following YouTube stars, sending videos to their friends on Snapchat, and talking to their grandparents on Skype. For students used to interacting with screens, it's sometimes easier to express themselves on video than it is in person. It's much less intimidating to record a response in privacy, with time to think and to edit if necessary, than to raise a

hand in a crowded classroom or lecture hall. Using video responses can offer a new way of interacting with teachers and fellow classmates that will allow a wider range of personalities to comfortably engage with the material and their environment.

That doesn't mean video should completely replace in-person interaction. The popular trend of flipped classrooms goes the other way. Lectures are pre-recorded, and students watch them before coming to class. Then, when they get into the classroom, time can be completely devoted to discussion instead of needing to spend the bulk of the time lecturing. By putting the more passive part of learning—listening to the lecture—outside the classroom, the teacher can focus valuable in-person time on the kinds of activities that are improved by physical presence: answering questions, guiding discussions, and interacting with the students personally.

Helpful tips:

- Try requiring the entire class to prerecord their responses before a lecture. Not only does this ensure everyone has a chance to be heard, it allows you to get a better sense of the individual personalities of all of your students. If you like, you can cherry pick particularly thoughtful responses or insightful questions to replay in class.
- Start off a new class by asking everyone to send you a brief video introducing themselves and talking a little about what they hope to learn. Not only will it give you some insight into what kind of class you'll have this year, it makes pairing faces with names so much easier. (And gives you a helpful reference two weeks in, when you realize you've forgotten the name of the shy kid in the corner, and are too embarrassed to ask again!) Make sure to lead by example and record a video introduction of yourself to them as well.
- Jump on the flipped classroom bandwagon. Record the lesson ahead of time (which also makes it so much easier to check your and edit out any flubs). Then, when the students get to class, you can focus on drilling down, making sure they really understand the material.
- Remember you aren't producing the 5 o'clock news. Content doesn't need to be perfect. Try to record one large take and just repeat where you mess up. Editors will allow you to go back and delete unwanted sections. This will save considerable time in creating a finished product.

Flipped Classroom will Become the Norm
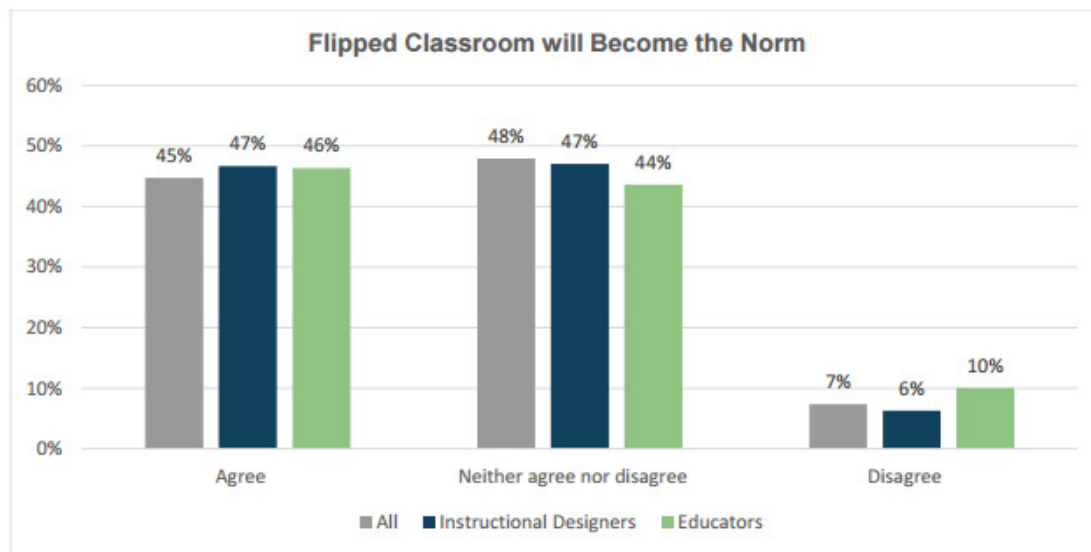
When asked about whether flipped classrooms will become the norm, there is a pretty even split between those answering in the affirmative (45%) and those who are undecided (48%).
Source: Kaltura State of Video in Education 2015 Report

4. Video makes education more flexible.

There are certain kinds of students who do very well in traditional classrooms. People who enjoy reading, take excellent notes, only need to be told information a few times to grasp and remember it, and have a personal situation conducive to showing up regularly to classrooms in person at traditional hours are easy to teach.

But there are plenty of bright, willing, hardworking students who don't meet all these criteria. Some students have learning disabilities, aren't learning in their native tongue, or just lack a strong ability that makes reading more challenging for them. Some are more kinetic learners, who are less comfortable staying still. Others need to hear information repeatedly before it sinks in. Furthermore, not everyone's life situations will let them attend traditional classes. Some will have jobs and family responsibilities, military duty, or even obligations like grand jury duty. Others may live in areas without easy physical access to the classes they need. Some may be unable to attend class in person because of illness, injury, or disability. Even grade school children may be actors or athletes with unconventional schedules. And everyone has the occasional sick day, doctor's appointment, or family emergency.

Video makes it possible to reach people where and when they are available. Good video instruction allows educators to serve people who are often left out when it comes to traditional education. It lets schools extend their reach beyond their walls to people who can't be there in person. Offering asynchronous lessons via on demand video, accessible on any device, helps ease the burden on students who are working or taking care of family members by allowing them to learn on their own time and where it is convenient to them.

It also gives educators one more tool in their toolbox. We all know that different people have different learning styles. By incorporating video, educators give students another method of learning, increasing the chance that the entire class will successfully learn the material. Video is not a replacement for text, but it is a valuable supplement and alternative, giving students more options in how to engage with their lessons.

"With the rate of change in technology, it is difficult to imagine where we will be in 10 years, but right now we use video to assist students with disabilities in the composition process and it transfers to the writing process. I can only see the role growing and the tech making its use easier." *(Educator at a very large higher education institution)*

Helpful tips:

- You don't have to be a MOOC to offer distance learning. Even grade school districts such as Gwinnett County Public Schools have built online learning curriculums to serve the needs of their diverse student populations.
- Video can help with accessibility issues. Using automated closed captioning such as Kaltura REACH enables compliance. It's easy to create lessons with subtitles, without the need to handle transcriptions internally. Better yet, REACH also can allow you to order translations at the same time so you can offer courses in multiple languages.
- Take advantage of asynchrony. Try creating video study guides that can be available at any time, including 3am the night before an exam. Recorded lectures also let your students review your own words months later as they prepare for the final. Today's technology even allows you to synch your slides with your video recording, create chapters, and produce searchable metadata that will help your students find the exact information they need before an exam. Reduce the amount of time you need to spend repeating yourself—your students can play the videos of your explanations as many times as it takes to grasp the concept. And best yet, study guides and short explanations are easily reusable; create them once and you can use them as is or with minor edits in subsequent years.

> "Server monitoring indicates high spikes in student review close to exams. Faculty reports an overall improvement in grades when elective lecture capture is employed." *(An instructional designer in a large higher education institution)*

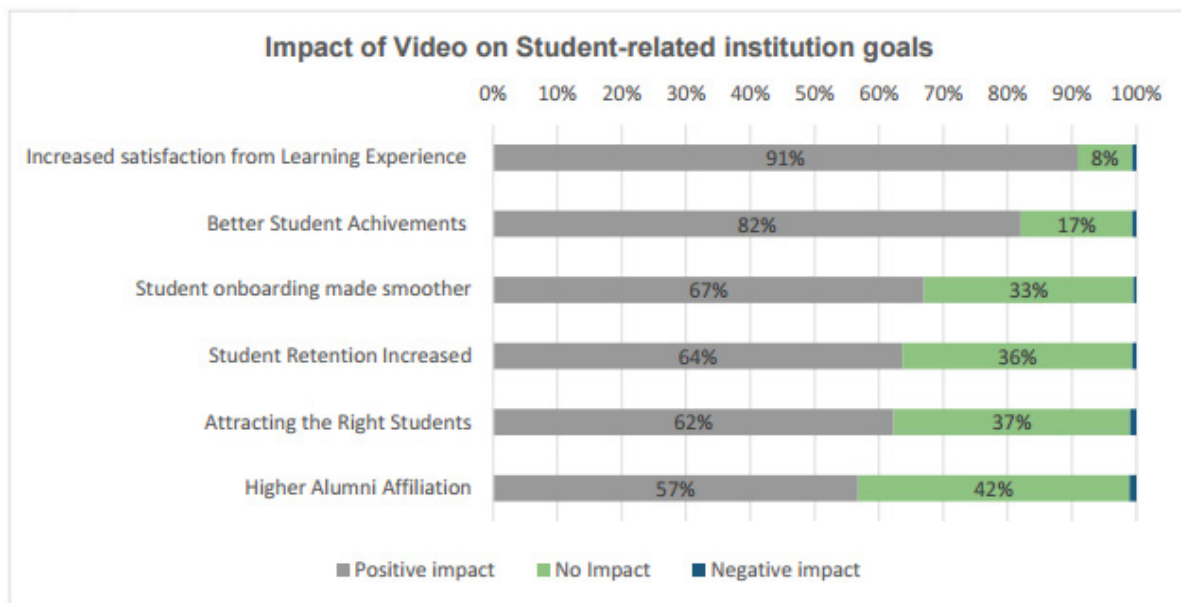## 5. Video encourages accountability.

When online learning was first introduced, there was a lot of concern about accountability. How would administrators be able to tell who was actually enrolled? How could educators be sure their students were actually paying attention when they weren't physically in the room? How could lecturers monitor whether their lesson was going well without nodding heads or blank stares for feedback?

The latest interactive video tools have addressed all these problems and more. Today's analytics make it possible to tell exactly who is watching any video. Not only that, it's possible to monitor how many times an individual student watched it, if they watched to the end, and if not, exactly when they dropped off. Live analytics can even give lecturers up-to-the-moment feedback on their viewership, allowing them to course-correct while speaking, just as they would in front of an in-person
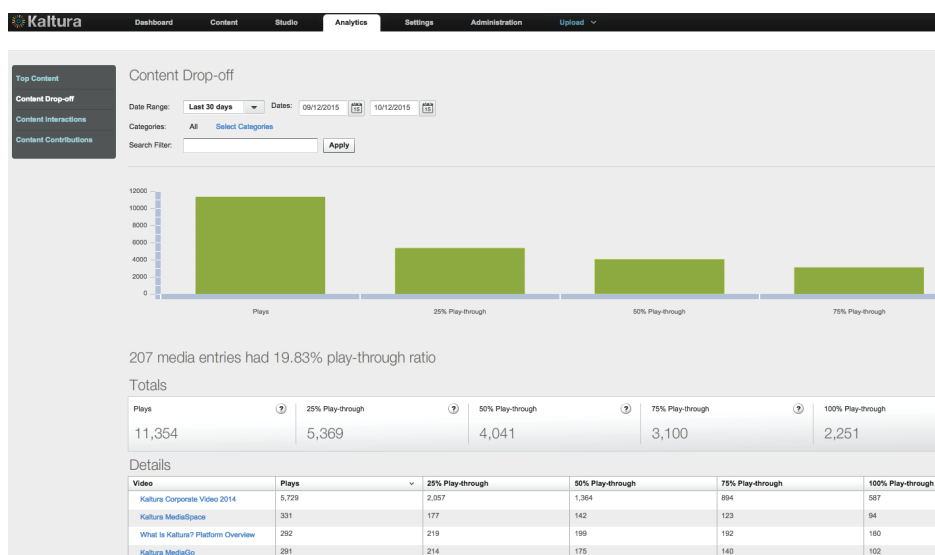
audience that was nodding off. Arguably, for large classes, there is even greater accountability than in-person lectures—how many professors can actually keep track of each individual student in a big lecture hall?

Of course, a student might be doing something else while the video plays in the background. (It can similarly be pointed out, though, that even when students in physical classrooms are restricted from surfing the internet on their laptops and phones, there is no way to prevent the time-honored doodling and daydreaming.) Today's interactive video tools can even help with that. Live polls allow educators to check in with the class mid-lecture, the same as

Impact of Video on Student-related institution goals

Goal	Positive impact	No Impact	Negative impact
Increased satisfaction from Learning Experience	91%	8%	
Better Student Achievements	82%	17%	
Student onboarding made smoother	67%	33%	
Student Retention Increased	64%	36%	
Attracting the Right Students	62%	37%	
Higher Alumni Affiliation	57%	42%	

■ Positive impact   ■ No Impact   ■ Negative impact

Source: Kaltura State of Video in Education 2015 Report

they might with a show of hands. No show of hands will result in an engaging and accurate graph like today's polls produce, though.

A new feature that can be used to make video learning even more accountable is Interactive Video Quizzing. With this feature, it's possible to insert questions in the flow of a video. An educator might use it simply to check whether students are understanding the material and use the results to inform subsequent lessons. Or the results might be included as part of a student's grade. It's even possible to roadblock the rest of the video, forcing students to review the material after a correct answer and prove their understanding before they can advance to the next segment.

Today's educational environment, from K-12 through higher education, is increasingly asked to prove their methods are successful. Accountability and metrics have become industry watchwords. Using the analytics online video education provides allows educators not only to prove their progress in a quantitative way, but to gather the data they need to improve learning outcomes.
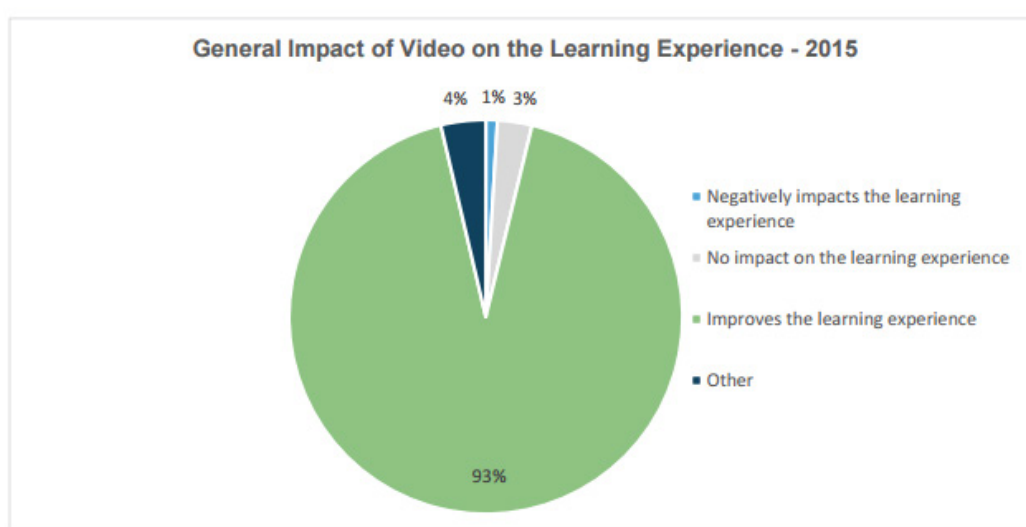
Helpful tips:

• Use video metrics as more than just a way of taking attendance. Focusing on which parts of the lecture resulted in increased activity (such as participating in Q&A) and which parts resulted in decreased activity (such as drop-offs) can help a teacher improve future lessons to better keep their students engaged.
• Try including polls as part of your lesson plan. It's not just pandering—it's a way not only to increase engagement but to evaluate mid-lecture how well your students are understanding the material. For example, you can ask a question at the start of a video and then ask it again at the end to measure comprehension and see if your message is coming through.
• Interactive video quizzes have multiple uses. The more relaxed version merely lets you evaluate comprehension. But they can also be used as a way to help students study, or even a more engaging way of delivering a formal exam.

Conclusion

In the world of television, media producers differentiate between the "lean back" experience of passively watching content on a big screen and the "lean forward" experience of interacting with content in your hands. As video continues to permeate every aspect of our connected lives, it is increasingly moving from "lean back" to "lean forward". Today's video tools are ensuring that educators no longer have to fear that incorporating videos will encourage their students to tune out, like the grainy filmstrips of yore. As video becomes increasingly interactive, it has the power to pull students deeper into the material, making it more personal, flexible, and ultimately accountable for increasing learning outcomes. Even better, these tools make creating interactive video easier than ever before. It's time to experiment and see how video can change the way students interact with their peers, their teachers, and ultimately, with the curriculum itself.

General Impact of Video on the Learning Experience - 2015

4% 1% 3%

- Negatively impacts the learning experience
- No impact on the learning experience
- Improves the learning experience
- Other

93%

About Kaltura

Kaltura's mission is to power any video experience. A recognized leader in the OTT TV (Over-the-top TV), OVP (Online Video Platform), EdVP (Education Video Platform), and EVP (Enterprise Video Platform) markets, Kaltura has emerged as the fastest growing video platform, and as the one with the widest use-case and appeal. Kaltura is deployed globally in thousands of enterprises, media companies, service providers, and educational institutions and engages hundreds of millions of viewers at home, at work, and in school. The company is committed to its core values of openness, flexibility, and collaboration, and is the initiator and backer of the world's leading open-source video-management project, which is home to more than 100,000 community members. For more information visit www.kaltura.com, www.kaltura.org, or www.html5video.org.

Kaltura Business Headquarters

North America
250 Park Ave S, 10th Fl | New York, NY,10003, United States
Tel: +1 800 871 5224

Latin America
Av. Nova Independencia 1061 - Brooklin
São Paulo, 045701-001, Brazil
Tel: +55 11 3589 2181

Europe
4th Floor, Northumberland House | 303-306 High Holburn | London, WC1V 7JZ, United Kingdom
Tel: +44 (0) 203 475 8313

Asia-Pacific
8 Shenton Way, #05-02 AXA Tower
Singapore, 068811
Tel: +65 6818 6083

www.kaltura.com | sales@kaltura.com