



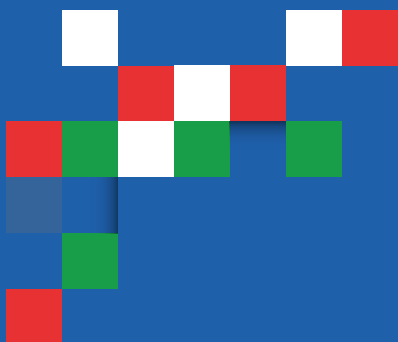
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# How Online Proctoring will shape the future of Educational Organizations

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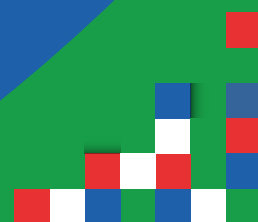
Online proctoring is the bridge that connects invigilators to students taking online exams. There is more to it than what meets the eye. Get to know everything about online proctoring.

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## INTRODUCTION

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Teach one to think intensively and to think critically . . . intelligence plus character, that is the goal of true education - **Martin Luther King Jr.**

Over the past decade, education has undergone a serious evolution. The curriculum has changed, the measures of performance and success have also changed. Above all, the medium through which education is imparted has also undergone a sea change.

Professionals with tight schedules are resorting to online courses to keep their skills, qualifications, and resumes up-to-date. Educational institutions, including schools and colleges that were wary about adopting online education, are now rapidly trying to get on board. And with the pandemic, move to the digital medium, or perish in ignorance is the new mandate of education.

While remote learning, e-learning, or online learning is for all, there is a catch. Exams or tests which are typically conducted in tightly supervised environs go for a toss in online learning. But, this is one challenge that technology can help solve. Enter - Online Proctoring.

# The future of examinations: Online proctoring



## What is online proctoring?

Online proctoring is the process of enabling students to take online tests from remote locations without compromising the integrity of the examination. It establishes the identity of the student and also supervises their actions while taking the test. Any irregular student behavior or malpractice is flagged, just like in real-world examinations.

### How does online proctoring work for educational institutions

Online proctoring enables educational institutions conducting online tests in three ways:

1. It authenticates the identities of students taking the online test,
2. It helps supervise student behavior and actions during the test hours,
3. It simplifies the process of assessing student performance effectively.

Let's take a deeper dive into each of these possibilities:

## Student authentication

Online tests lack the control that classroom tests have. There is a limited possibility for the examiner to check and establish the veracity of the student. Online proctoring solves that problem by leveraging multiple technologies like real-time video streaming, facial detection, or even tracking of student's IP addresses.

## Behavior monitoring

It is common knowledge that a section of the student community resort to malpractice during exams to secure a good grade. A study conducted by Don McCabe of Rutgers University found that the malpractice was happening at staggering rates across all academic disciplines like law, business, and engineering ([Source](#)).

When online tools are involved in conducting tests, the risk of malpractice is higher. Online proctoring can help mitigate that risk and further arrest the possibility of malpractice. Real-time or recorded online proctoring enables examiners to monitor student behavior during exam hours and take appropriate actions.

## Performance assessment

Post examination, an examiner has to spend a considerable amount of time analyzing the student's responses and grade them based on specified school, college, or university guidelines. This is a time-consuming affair, and given the involvement of the digital medium, it could be further complicated.

A smart online proctoring tool can remove that difficulty by giving smart insights into student activity. In fact, thanks to Artificial Intelligence and Machine Learning, we are not far from the possibility of machines taking over the grading part. Examiners can then focus on finalizing the grades and taking the final call on the student's results.

To make all this happen smoothly, online proctoring requires both sides of the table, examiners, and students to have some basic infrastructure. This includes:

- A PC/Laptop/Tablet/Smartphone
- A stable internet connection
- A webcam and mic
- A browser that can support HD video streaming



A PC/Laptop/Tablet/Smartphone



Webcam and mic or  
integrated speaker system



Stable internet connection



A web browser that supports  
HD video streaming

# Types of online proctoring

The basic idea of online proctoring is to oversee the activities of a student through video while they are taking the test. There are three ways that this can be done:

1. Live Online Proctoring
2. Recorded Proctoring
3. Advanced Automated Proctoring

## Live Online Proctoring

As the name suggests, in a live online proctoring session, a qualified proctor monitors the student's real-time actions through audio, video, and real-time screen sharing. The qualified proctors are either designated by the proctoring service or appointed by the educational institution conducting the test.



Source: <https://www.youtube.com/watch?v=6FoWyyyCELA>

## Recorded Proctoring

In a recorded proctoring session, there is no designed proctor. The student's on-screen and off-screen activities are recorded. The video recordings are later analyzed, usually at a fast forward rate. Any red flags like leaving the screen, referring to spaces outside the screen, etc. are annotated in the video clipping.

Compared to live online proctoring, recorded proctoring saves a lot of time and enables a single proctor to manage multiple tests.



**Source:** <https://www.insidehighered.com/digital-learning/article/2017/05/10/online-exam-proctoring-catches-cheaters-raises-concerns>

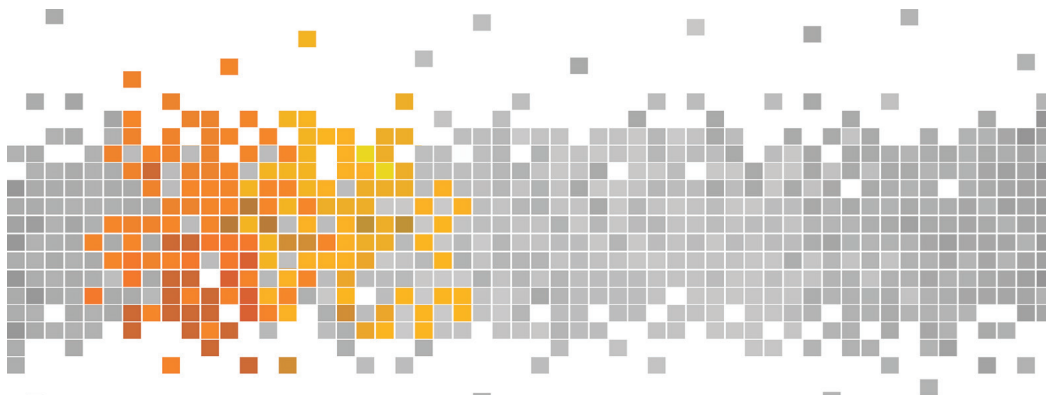


## Advanced Automated Proctoring

In an advanced automated proctoring session, a large chunk of the monitoring activity is done by an algorithm. The algorithm uses advanced technologies like facial recognition, voice analytics, etc. to spot anomalies. For example, facial recognition is used to identify whether it is the same student who is taking the test. Voice analytics sweeps through audio signals to figure out if there was any external help that the student sought while taking the test.

The screenshot displays the TALVIEW proctoring interface. At the top, a navigation bar includes 'Candidates', 'Invites', 'Assessments', 'Live', and 'Reports'. The main header shows the user 'Senior Developer | Session1' with ID 281249, session dates '19 Sep'19 | 15:08 PM - 19 Sep'19 | 15:10 PM', and a 'Session Rating' of 'HIGH'. Technical details like 'Linux', 'Chrome', and 'IP 10.0.96.35' are also visible. A 'BIOMETRICS' dropdown menu is present. The central video player shows a man with glasses smiling. To the right, a 'Search events here...' box is followed by a list of events: 'Login Image Matched' (07:12:32 PM), 'Login Audio Mismatched' (07:12:32 PM), 'Login Photo ID Matched' (07:12:32 PM), 'Window Focus-In' (07:14:55 PM), and 'Window Focus-Out' (07:14:56 PM). At the bottom, the user 'Joseph Hansen' with email 'kyla\_nienow@yahoo.com' is listed, and a 'Close' button is on the right.

Source: <https://proview.io/>



# Who can use an online proctor

## Recorded Proctoring

Proctoring services are for all those who are rendering online education. They can typically be useful for three kinds of education or certification providers.

## Assessment providers

Assessment providers provide ready-made assessments and test papers for clients who follow a uniform pattern of tests. The uniformity of tests, be it in the pattern of questions, time duration or mode of examination, makes it easy for assessment providers to conduct tests at scale. Pearson and IBM Kenexa are typical assessment providers.

## Online education providers

Udemy, edX, Coursera have all become go-to destinations for online courses. There are also countless MOOC (massive open online course) providers who will need an online proctor to supervise their tests.

## Certification providers

Professional and Chartered services like CPA, CIMA, healthcare professionals, fire safety professionals, etc have industry certifications that make them qualified for service. These certification exams can be monitored by an online proctor. They can also maintain video records of the exams during which an individual was awarded certification. For example, mock fire drills for a fire safety inspector.

# Is Online Proctoring Effective?

Online proctoring has received both praise and flak from the various sections of the academic community. One of the most commonly raised doubts about online proctoring is its effectiveness.

Can online proctoring replace the experience of an actual examination conducted in a physical space? Online proctoring proves its effectiveness in several ways.

## Identify if candidates are leaving

One of the challenges of an online test is that examiners cannot control the physical movement of students. Studies have proven that online students are far more likely to cheat than their on-campus peers (Source). The absence of monitoring makes malpractice more tempting. The presence of an online proctor can actually make the students act consciously. It restricts their physical movement that could impair the test's integrity.

## Identify the presence of unauthorized personnel

Online tests are usually taken at the student's own premises. It could be their own homes, college dorms or even an office space. The personal setting gives them the facility to arrange for an ally who can help during the exam. Advanced online proctoring services can identify the presence of unauthorized personnel in the exam area and alert the examiner to take preventive action.

## Track chat logs or on-screen activity

As a ground rule for any online test, students are not allowed to use external support in the form of online search or instant messaging. An online proctoring service helps monitor the on-screen activity of the student. It also sheds light on the real-time chat logs that the student could have made during the test duration. This tight surveillance makes cheating difficult, and makes online proctoring an effective replacement for exams inside educational institutions.

# Challenges in the education sector that online proctoring can resolve



The education sector has countless challenges. Online proctoring can solve the more important critical challenges that will make education accessible and affordable to all.

## Track chat logs or on-screen activity

One of the biggest challenges of education is that not all students can physically reach the college or university where they want to pursue their desired branch of education.

Online education helps remove the physical barrier that is preventing students from accessing the education that they desire. To make the education worthwhile and the qualification credible, online proctoring can help. It can act as a virtual safeguard that ensures that online students have put in as much honest effort as their on-campus peers to achieve graduation, certification or qualification.

## Sustaining quality of education

There is a reason why the franchise model has not been adopted by the educational sector with the same enthusiasm as in other sectors. Education is a service of quality. Maintaining the standard calls for immense effort and discipline, especially from the side of teachers, lecturers, and the administration. In the franchise model, it is extremely difficult to maintain.

As a result, educational institutions end up creating and maintaining their standards within a small geographical footprint. Online proctoring enables educational institutions to instate the same standards of examination that they have established. As a result, they can also uphold the quality of education that they are renowned for.

## Supervise students at scale

Even with an army of teachers and educators, educational institutions cannot always supervise students at scale. The situation becomes difficult during examinations and periodical tests when the student to teacher ratio increases phenomenally.

Online proctoring, specifically, automated online proctoring, makes it possible to monitor batches of students at scale without compromising on the supervising guidelines. In fact, online proctoring systems with auto-graders can also help educators to swiftly wind up the grading process.



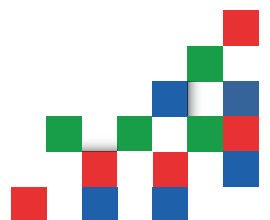
# Advantages of online proctoring services



We have seen many ways how online proctoring can help educational institutions dispel their recurring challenges. Furthermore, they also provide a wide range of benefits that can help educational institutions achieve their goals:

## Easy access to assessments

Imagine a college of 1,000+ students in diverse branches of study. Collecting, organizing, and managing their assessments regularly, year after year, can be a nightmare. It becomes extremely difficult when the assessments are too many in number and also are paper-based. Needless to say, it is easy to lose some of the papers which could cause serious damage to the institution's integrity and also the student's future



## Saves physical infrastructure

Conducting an exam, even if it is for a few dozen students, calls for diligent planning of logistics including exam halls, seat arrangements, supervisors, and often even transportation for students and teachers.

Online proctoring eliminates any need for such logistic planning. It has zero infrastructure requirements. Students can take the tests from the comfort of their homes or from any other suitable spaces like libraries. Examiners can also monitor students while they are taking the test from anywhere.

## Student identity verification costs

Across any function and branches of study, impersonation is one of the downsides of online tests. It is possible for anyone else to sneak in as the student through their IP and perform in place of the student.

With online proctoring, the risk of impersonation is fairly negligible. The online proctor can verify the student's identity through digital document verification and also through facial recognition. Furthermore, automated online proctoring tools are intelligent enough to recognize the facial patterns of the student and connect them with database records for identity verification.



## Personalized exam scheduling

In an ideal scenario, exams are conducted at the same time for all students belonging to the same batch or branch. However, in an online learning scenario where students could be from various walks of life, including profession and age group, a scheduled exam could be challenging to attend.

It is here that online proctoring can help. It enables the student to take the exam at a personalized time. The online proctor can supervise the exam and ensure that it is carried out in accordance with the approved guidelines.



# Implementing an online proctoring application

Online proctoring cannot be done over social media video calls or free video conferencing tools. Educational institutions need a robust tool that would equip the proctor to annotate observations, raise red flags, and also verify the student's identity.

That said, there are several boxes that need to be ticked off before selecting an online proctoring application. Some of them are discussed below:



## Integration with LMS

An LMS or a Learning Management System captures the entire course journey of a student. It also maintains records of the course, training programs, assessments, and so on. A proctoring application that can be integrated with the LMS can help the educational institution simplify the overall process of student and course management.

## Bandwidth performance

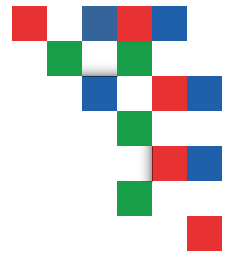
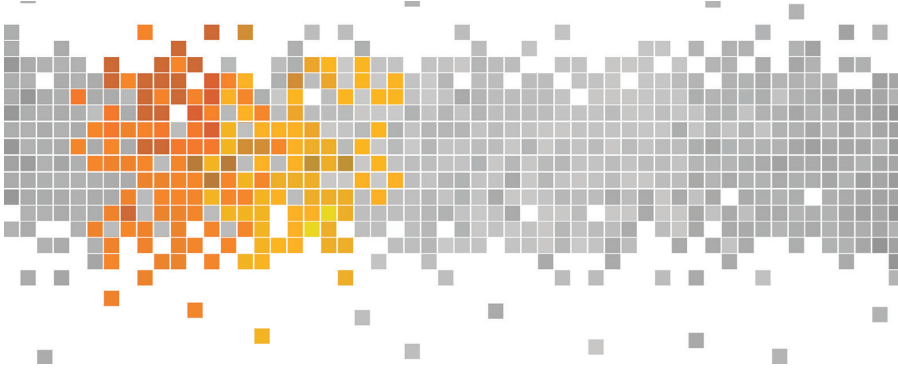
A proctoring application is extremely reliant on internet connectivity. Most often students could also access it from smartphones that have mediocre data connections. It is essential that the online proctoring application works fine with minimal bandwidth connections as well.

## Automated features

An online proctoring application must make things easier for all — for the student, the proctoring service provider, and also for the educational institution. That makes automation a must-have option. The application must provide for automating essential tasks like checking the student's credentials, auto-grading of tests, recording on-screen video, etc. to save time and effort.

## OS independent

All software, including the online proctoring application, must be accessible from any OS - Apple iOS, Windows, Android, or Linux. In other words, it should be browser-friendly. A web browser-based application makes it easy for all to access and benefit from the application.



## Malpractice controls

The primary purpose of an online proctoring application is to restrict and possibly arrest any form of malpractice. There should be built-in triggers that will raise a red flag when a student is resorting to activities that are not permitted. For example, opening another tab and running an online search.

## Scalability

A typical proctoring test would be attended by at least hundreds, if not thousands, of students. The online proctoring application must be capable of handling this load without any glitch. This calls for reliable servers that run on the cloud, robust system architecture and also rigorous testing to avoid any downtime.



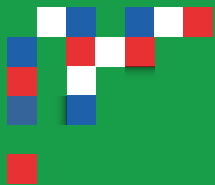
## CONCLUSION

### Online proctoring: The Way Forward

We are looking at a new normal where education may not happen at schools anymore. Exams may not happen at exam centres, but at web browsers with a stranger proctoring its progress. Online proctoring is the way forward. It is going to be the new normal for educational institutions that are struggling to monitor tests at scale.

An online proctoring application can be a bridge that connects both sides of education. It will help educational institutions to overcome the most common challenges in imparting education. For students, it will provide an honest way to take tests and prove their mettle while savoring the comfort of online education.





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With our niche and rich expertise in CMS, CRM, e-commerce and Marketing Automation, we help companies across the globe leverage their best on web and cloud through our platform integration, data analytics and customer engagement services.

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