REMOTE PROCTORING

WHAT IS REMOTE PROCTORING?

Remote proctoring, also known as online or virtual proctoring, refers to various technological tools implemented in an internet-based testing process that perform functions similar to those of live human proctors for the purposes of ensuring candidate identification, maintaining test security and controlling cheating during test administrations. These tools include programs that control the use of the test taker's computer, including computer and browser lockdowns, recognition technology to affirm test taker identity and webcams with which live proctors at a remote location can monitor the test takers and their environment during the test. As remote proctoring has rapidly gained popularity in the education sector, where it has been implemented successfully in a large number of colleges and universities, many human resources professionals are now wondering if it is a viable option for employment testing. This paper will review some of the options for remote proctoring and explore the benefits of, and issues related to, using remote proctoring for employment testing.

UNPROCTORED INTERNET TESTING

The demand for remote proctoring developed out of concerns about the uncontrolled nature of unproctored internet testing. Unproctored internet testing, or UIT, refers to a testing process administered via the internet to test takers who may be in any location provided they have a computer and internet access. UIT has been widely used in private sector employment selection for years and has more recently become an attractive option for public sector agencies wanting a testing process that can be administered on an as-needed basis to an infinitely large candidate pool. Additionally, UIT provides all the benefits of computer-based testing, such as the ability to quickly and relatively easily develop new tests or alternate test forms using electronic item banks and to instantly score the test, which allows for fast selection decisions. UIT has many other advantages including:

- No need to locate and secure testing sites
- No need to print, ship and secure hard copy test materials
- No need to hire, train and supervise proctors
- Greater convenience for candidates in terms of scheduling and availability
- Candidates do not have to travel to a testing site, which allows for a more geographically dispersed candidate pool. This can increase diversity as well as the overall quality of the candidate pool

But as more public sector agencies consider implementing UIT, there has been increased concern that the lack of proctors will lead to testing processes that are unreliable, invalid or just too risky.

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THE ROLE OF PROCTORS

To fully understand the concerns regarding UIT, we must consider the functions traditionally performed by live human proctors.

➢ **Candidate Identification.** Typically, one of the first steps in a test administration is ensuring that the individuals taking the test are, in fact, the individuals who are supposed to be taking the test. Proctors affirm candidates' identity by examining driver's licenses or other official forms of identification or through more sophisticated means, such as fingerprint scanning and facial recognition systems.

   In a UIT process with no means of verifying candidates' identity, test administrators have no way to know who is actually taking the test. Candidates could easily have a surrogate take the test for them or take the test multiple times under fictitious identities to practice the test and learn its content.

➢ **Test Security.** Proctors maintain strict control of access to test materials through secure storage methods and distribution processes to track each test book, answer form and other materials, ensuring that all materials are accounted for before, during and after the test administration.

   A UIT process in which there is no control over the computers on which it is administered is vulnerable to loss of test content through copying, printing, saving and sharing of the content.

➢ **Standardization.** An important role of proctors is ensuring the consistency of the testing process. For fairness and defensibility of the test, all candidates should be treated the same and have the same testing experience. And to help ensure the validity and reliability of the test, all candidates must be given the same instructions, identical (or statistically equivalent) test content and the same amount of time in which to complete the test. To this end, proctors ensure that all test takers have the correct materials, are given the same instructions and complete the test within the required time. Additionally, proctors control the testing environment by minimizing noise and other distractions.

   With no proctors to maintain control over the administration, timing and environment, test takers in a UIT process can have very different experiences. This lack of standardization can range in seriousness from a few candidates taking the test in environments that are not conducive to good performance, to such differences in the timing, instructions and even candidates' understanding of the process as to render the test unreliable.

➢ **Cheating.** Cheating by candidates can take many forms, such as communicating or receiving answers through non-verbal means and obtaining answers from materials brought into the test administration covertly or even written on a body part such as a hand, arm or leg. Cheaters continue to adapt new technology to the cheating effort, including the use of smartphones and watches to look up, transmit or receive information during the test and cameras concealed in clothing or objects such as pens and water bottles to record test content. The mere presence of proctors deters cheaters, and trained proctors can prevent even sophisticated forms of cheating (although, arguably, not all of it) by recognizing signs of cheating and either stopping it before it starts or removing cheaters from the testing process.

Candidates in a UIT process have almost limitless freedom to receive assistance from others during the test, including having another person present to provide answers (or even take the test for them), searching for answers in printed or online sources and copying test content.

It is important to note that, in this context, cheating refers to providing falsely obtained answers to test questions that have objective right or wrong answers, such as cognitive tests (including knowledge and aptitude tests.) Whereas, falsifying answers on self-report measures such as personality tests is not considered cheating but rather "response distortion." Response distortion is thought to occur with equal frequency in both proctored and unproctored environments, making UIT a more acceptable practice for personality tests.

Because of the potential for problems due to the absence of proctors, many in the testing field believe that UIT is, at best, a questionable practice for cognitive tests in high stakes testing (which employment testing is generally considered to be,) and some experts have asserted that UIT is never acceptable, especially when the test is the sole selection tool in the process.[1]

THE SOLUTION: REMOTE PROCTORING

Remote proctoring systems attempt to mitigate the problems of unproctored testing by employing various technological tools to either take the place of live, human proctors or, in some cases, to enable live, human proctors to do their job "virtually" from another location. Remote proctoring is not a single process or methodology but rather a system of various tools put in place by the test administrator according to the specific needs of the testing process, particularly, how much control or monitoring is needed.

The following is a description of common remote proctoring tools. This list is by no means exhaustive, and new technologies are being developed, tested and implemented all the time.

Computer and Browser Lockdown. The minimum level of control, which is standard in any remote proctoring process (as well as many UIT processes,) is the use of code or programs within the testing platform itself that prohibit the test taker from stopping and restarting the test, opening other programs, using communication technology such as email or instant messaging programs and performing common tasks such as copying, saving and printing. This makes theft of the test content difficult and eliminates opportunities for cheating by accessing information on the internet or communicating with others during the test.

Recognition Technologies. Assuring the identity of the test takers can be as simple as a candidate holding his or her driver's license up to a webcam for visual verification by a remote human proctor or sophisticated recognition technologies that include fingerprint and palm scanning, face or voice recognition and digital signature analysis. One tool that does not use additional equipment such as scanners or a signature pad is keystroke analysis, in which the candidate's unique typing pattern when typing a short passage prior to beginning the test is analyzed and compared to his or her typing pattern from the same passage typed at a previous time, such as when he or she registered for the test or while under observation in the human resources department.

1 Tippins, N.T., Beatty, J., Drasgow, F., Gibson, W.M., Pearlman, K., Segall, D.O., & Shepherd, W. (2006). Unproctored Internet Testing in Employment Settings. Personnel Psychology. 59, 189-225.

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Fully Live Remote Proctoring. With fully live remote proctoring, a human proctor in a remote location observes the test takers during the entire test session via a webcam located on or near each test taker's computer. Just like traditional live, human proctors, the virtual proctors watch for behaviors that may indicate cheating and alert the test takers to change their behavior. If a proctor observes an overt violation of the pre-established rules, he or she may end the testing session for that test taker. Proctor-to-candidate ratios can vary from one-to-one, to one proctor monitoring many test takers simultaneously.

An option sometimes employed in fully live remote proctoring is to require that the test taker rotate the webcam to show the entire room to the proctor prior to the test and possibly leave the webcam positioned so that the test taker's workspace and surrounding area can be monitored throughout the test as well. Not only does this limit cheating, but it also allows the proctor to exercise a certain amount of control over the testing environment, thus enhancing consistency across the test takers.

Record and Review. Video recordings can be made of the test sessions for review at a later time. All recordings may be reviewed, a sample of recordings may be selected for review at random, or recordings could be reviewed only when they were flagged for potential cheating during the test. As with live proctoring, this requires the use of a webcam.

Automated Monitoring. Not all detection of cheating is done by proctors. Some remote proctoring programs detect possible cheating through a real-time analysis of test responses. These automated monitoring programs use advanced algorithms to detect unusual answer patterns, for example, answering too fast or too slowly for the level of difficulty of a test item or answering a series of easy items incorrectly, followed by answering a series of difficult items correctly. The monitoring program can alert the proctor to observe the test taker more closely or flag the test for test administrators to review a video recording of the test taker after the administration.

CONSIDERATIONS

In deciding whether to implement a remote proctoring solution, the test administrator should consider the following:

Does the test type make it susceptible to cheating? As stated above, cheating is a concern with cognitive tests but not so much with self-report measures such as personality tests.

What is the likelihood of cheating? Cheating is much more likely if a large number of people beyond the candidate pool possess the information you are testing or the information needed to answer the test questions is readily available in printed or online sources. Additionally, there is more incentive to cheat on a particular test if that test is the most important part of the selection process or if it is a hurdle in the process rather than one of several components contributing to a candidate's overall score.

Are there other viable options? These might include computer-based testing in a proctored environment or even a proctored paper-and-pencil test. There are also post-administration measures to detect possible cheating, for example, verification testing, in which high-scoring candidates must retake all or part of the same test in a proctored environment and achieve a score within a statistically-determined range of their initial score. If there are other options, test administrators need to determine if the advantages of administering the test in an online format make it worthwhile and, if so, whether post-administration measures to detect cheating are sufficient to eliminate the need for remote proctoring.

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Who will pick up the extra costs associated with remote proctoring? Education institutions often pass the cost of remote proctoring on to the students, but making job candidates pay for an employment test raises serious ethical concerns. Even if candidates can choose a free alternative, such as taking a paper-and-pencil version of the test in the human resources department, some may still see remote proctoring as a preferred option available only to those who can afford it.

Will a vendor let us choose only the tools we need? As stated previously, remote proctoring is a system of tools that are selected based on the specific needs of the testing process, and not all tools are necessary or even useful in all situations.

How will candidates perceive the process? Internet-based testing can make an agency appear more accommodating and inclusive by allowing tests to be taken anywhere and can even give the perception that the agency is tech-savvy and keeping up with the times. But the education sector has seen some backlash from students participating in remote proctoring who complain that the process is too burdensome and even intrusive. It has yet to be seen how remote proctoring will fair in the employment context in this regard.

CONCLUSION

Internet-based testing provides many benefits, perhaps the most important being the ability to test candidates located anywhere, administer tests at any time and have virtually no limits to the size of candidate pools. But the problems associated with the lack of proctors in a UIT process are just too significant to ignore. In determining whether remote proctoring is the right solution, an agency should consider the needs of a specific test in terms of risks related to cheating, candidate identity, test security and the overall standardization of the process. If the agency does opt for remote proctoring, it should identify the remote proctoring tools that will best take the place of live, on-site human proctors in order to mitigate these risks. With the tools available now, and more being developed all the time, when implemented carefully and in the right circumstances, remote proctoring can be a viable option for employment testing now and into the future.

ABOUT CPS HR CONSULTING

CPS HR Consulting is a self-supporting public agency providing a full range of integrated HR solutions to government and nonprofit clients across the country. Our strategic approach to increasing the effectiveness of human resources results in improved organizational performance for our clients. We have a deep expertise and unmatched perspective in guiding our clients in the areas of organizational strategy, recruitment and selection, classification and compensation, and training and development.

To further discuss the various remote proctoring considerations presented in this paper, please reach out to us at:

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