



WHITE PAPER

THE NEXT GENERATION OF ASSESSMENTS

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RECRUITING HAS ALWAYS BEEN ABOUT PREDICTION

ABSTRACT

Predicting performance, predicting turnover, predicting aptitude - hundreds of factors are at play in great hiring decisions.

When validated pre-hire assessments entered the employment space, they promised to bring scientific validity and reliability to what was previously an error-filled intuition-driven process. They gave invaluable insight into the core competencies and traits using traditional assessments required for job success, so managers could focus their time on candidates they know can excel at the job.

Today, pre-hire assessments have evolved beyond their legacy standardized-testing roots to measure those critical competencies faster, more accurately, and in a way that enhances the candidate's experience.

A BRIEF HISTORY OF ASSESSMENTS

Validated pre-hire assessments - those that are designed around specific jobs and job-related competencies - gained wide use in the 1970s. Assessments were most often taken at designated testing centers, and usually took the form of a long multiple-choice questionnaire or test.

Through the decades, these multiple-choice assessment tests were transcribed onto the new technologies of the time. The 1980s saw the rise of tests delivered via phone, and the 1990s saw these tests delivered over personal computers and subsequently the internet.

Up until the early 2010s, pre-hire assessments remained largely the same (e.g. a multiple-choice, closed-ended test). All that changed was the modality: over the phone, on a PC, over the internet, etc. These assessments were the same legacy tests simply delivered in a different way. They were long, boring and didn't make for a great experience for anyone involved.

Today's technology is revolutionizing the concept of

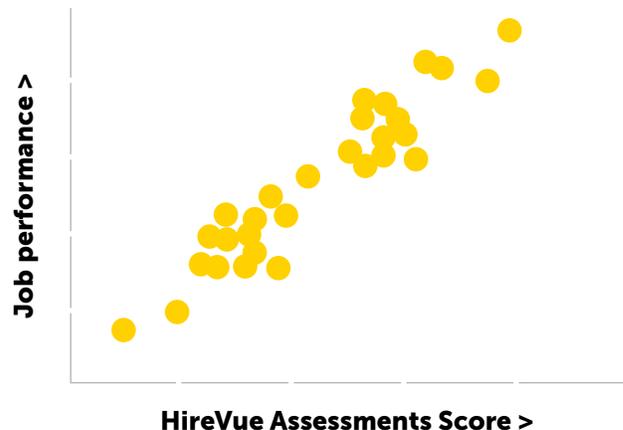
pre-hire assessment. They can be a quicker, more engaging experience, yet just as predictive as traditional pre-hire assessments.

THE VALUE OF PRE-HIRE ASSESSMENT TESTING

The key factors that distinguish pre-hire assessments from other employee selection methods (interviewing, resume screening, etc) are scale and validation. A single recruiter cannot consistently and objectively screen thousands of applicants; a pre-hire assessment provides a consistently objective evaluation that can be deployed on a large scale.

Validation is the process by which assessments measure the relevant competencies or behaviors needed to perform the job and predict who has a higher likelihood to be successful in the job.

Put simply, the scores achieved by assessment takers are statistically correlated to the attribute the assessment is trying to measure. For example, if the ultimate goal is to predict job performance, assessment scores would be compared to new hires' performance data.



This scientific approach to hiring means that great decisions can be made consistently, and on highly relevant criteria.

THE GOLD STANDARD: MEASURING MANY COMPETENCIES

The world of work is more complex than ever before. Even entry-level, hourly jobs require a unique combination of job-related competencies.

This is likely why cognitive ability is the best predictor of job success. Even so, people rarely work alone. Emotional intelligence, communication skills, and various personality traits are also critical for success on the job.

Unfortunately, traditional pre-hire assessments do a poor job of measuring different types of competencies. A test that measures personality traits won't measure cognitive ability or job-specific competencies; and a cognitive ability test won't give insight into personality or technical competencies. To evaluate candidates on a range of relevant competencies and traits using traditional assessments, several tests would need to be administered.

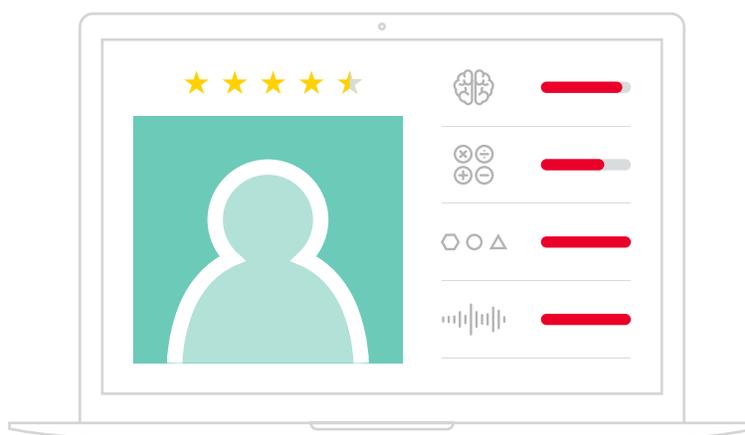
Getting a complete evaluation of a candidate like this is unworkable for most roles. To gather enough data for a comprehensive, validated evaluation of a candidate, hours of testing would be required.

IN THE 21ST CENTURY WE CAN'T EXPECT CANDIDATES TO SPEND ONE HOUR ON AN ASSESSMENT, MUCH LESS TWO OR THREE.²

This is where today's technology - namely artificial intelligence - comes into play. Combined with time-tested IO Psychology, we can finally move beyond the traditional multiple-choice test and deliver predictive assessments in an expedited, candidate-friendly modality.

Rather than subject a candidate to hours of testing, we can evaluate a candidate's complete job aptitude - emotional intelligence, personality traits, cognitive ability, and skill competence - in under 30 minutes.

This is possible by harnessing two new and complementary assessment modalities: video-based assessments and game-based assessments.



Assessments that measure different traits and abilities are complementary. Combined together, they provide a better prediction of job success than if they were administered alone.¹

WHAT ARE VIDEO-BASED ASSESSMENTS?

Since 2015, HireVue has used artificial intelligence and IO Psychology to turn on-demand video interviews into validated pre-hire assessments.

HireVue OnDemand video interviews are asynchronous. Candidates record their responses to interview questions at the time of their choosing, on any device. In the same fashion, recruiters and hiring managers can review candidates' interviews side-by-side at any time. The average recorded response is 15-20 minutes long.

There are thousands of data points in just 15 minutes of recorded video. It's important to note that the average, multiple-choice assessment only provides 100 or so data points, corresponding to the number of questions. The data in a video interview is the same data we parse when interviewing a candidate:

1) WHAT A CANDIDATE SAYS: THE CONTENT OF THE SPEECH

2) HOW THEY SAY IT: INTONATION, INFLECTION, AND OTHER AUDIO CUES

3) WHAT THEY DO WHILE SAYING IT: THE EXPRESSIONS A CANDIDATE PORTRAYS, PARTICULARLY IN RELATION TO WHAT IS BEING SAID AT THE TIME

A combination of leading-edge data science (a field that has only come into its own in the last decade), and Industrial-Organizational Psychology (a decades-old, established scientific field) makes this new approach to assessment possible.

The questions candidates answer are not random. They are designed according to Industrial-Organizational best practices after an in-depth job analysis. The questions in a video-based assessment are crafted

specifically to elicit responses predictive of job success. These are generally situational judgment, scenario-based, and past behavior interview-type questions. Video-based assessments work by statistically linking the video data from those recorded interviews to job performance data. Then a custom algorithm is created to analyze the interviews for each job role. The algorithm undergoes full validation testing, as well as adverse impact mitigation.

In contrast, with traditional assessment design, adverse impact is not apparent until the test is completed. At this point an organization may decide to use the assessment so long as it is validated for the job with minimal adverse impact. Removing adverse impact-causing questions is usually not an option; every question is critical for the accuracy of the assessment. Since video interviews are data-rich, any data that contributes to adverse impact can be removed from consideration without significantly impacting the assessment's accuracy.

The result is a highly valid, bias-mitigated assessment for specific job roles. The video interview medium - combined with AI - provides excellent insight into attributes like social intelligence (EQ), communication skills, personality traits, and overall job aptitude.

VIDEO-BASED ASSESSMENTS GIVE INSIGHT INTO:

- + ABILITY TO WORK IN TEAMS
- + PROBLEM SOLVING SKILLS
- + COMMUNICATION SKILLS
- + ADAPTABILITY
- + WILLINGNESS TO LEARN
- + CONSCIENTIOUSNESS
- + RESPONSIBILITY
- + DRIVE FOR RESULTS & INITIATIVE-TAKING
- + GRIT & TENACITY

WHAT ARE GAME-BASED ASSESSMENTS?

Like video-based assessments, game-based assessments leverage breakthroughs in artificial intelligence to deliver pre-hire assessments in a new, candidate-friendly modality.

Put simply, game-based assessments are a series of short psychometric games. Each game takes only a few minutes to complete, and different games give insight into different cognitive skills like numeracy, problem solving, or attention. Each of these skills are related to fluid IQ, or how well an individual processes completely new information. A complete game-based assessment typically involves a battery of different games, and takes less than 15 minutes to complete.

While HireVue's game-based assessments provide a quick and engaging experience, they maintain a high degree of face validity. The games' assessment nature is not hidden behind cartoon avatars or amusing gameplay mechanics; candidates understand the games are measuring competencies directly related to the position for which they are applying.

Like video data, game data is rich and complex. Games can collect a number of different data types. Actual game performance is the most obvious, but taps, swipes, and pauses also give insight into a candidate's thinking and problem-solving approach. HireVue's game-based assessments are also progressive. They can adapt in real time based on a candidate's performance. If a candidate successfully completes one task in a game, the next task they will be asked to complete will be more difficult. If they struggle and fail a task, they will be given an easier task.

Game-based assessments work by statistically linking this data gathered during gameplay to job performance data. Then a custom algorithm is created to analyze the data; the algorithm is validated against accepted measures of cognitive ability, as well as the job performance data.

Compare this to a traditional, 30-45 minute cognitive ability test. Since all candidates answer the same questions, there is a need for the test to be lengthy and comprehensive. A progressive, game-based approach means this time can be significantly condensed, as candidates complete challenges based on their ability level.

The game medium - combined with AI - provides excellent insight into cognitive attributes like analysis, decision-making, reasoning, and problem solving skills.

GAME-BASED ASSESSMENTS GIVE INSIGHT INTO:

- + PROBLEM SOLVING SKILLS
- + MEMORY
- + ATTENTION
- + MENTAL AGILITY
- + VISUOSPATIAL REASONING SKILLS
- + NUMERACY
- + LEADERSHIP
- + PERSEVERANCE

VIDEO-BASED + GAME-BASED ASSESSMENT

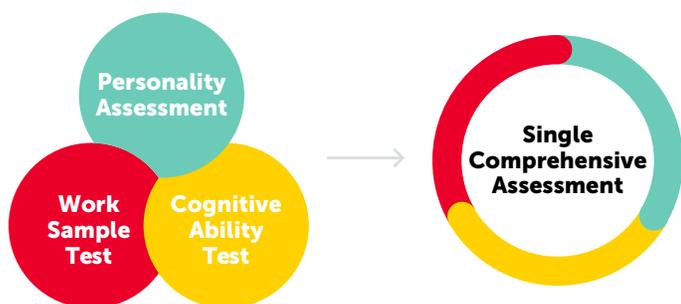
While video-based and game-based assessments excel in their own right, their strengths are complementary. Video-based assessments excel in measuring emotional and social aptitudes like EQ, communication skill, and personality traits. Game-based assessments excel in measuring cognitive aptitudes like fluid IQ, visuospatial reasoning, and memory.

Video-based and game-based assessments can be combined into a single experience, providing a comprehensive evaluation of each candidate in under 30 minutes.

Combining the strengths of a video-based assessment (measuring EQ, communication skills, and personality traits) with the strengths of a game-based assessment (measuring cognitive traits) means companies have the ability to assess the full range of relevant traits and competencies in under 30 minutes.

In today's competitive talent marketplace, the organizations that move fastest are frequently rewarded with the best hires. The combination of video and game-based assessment means companies can collect a huge amount of data on each candidate in a single

hiring process step. Unlike a traditional assessment, where assessment scores are often provided with little context, recruiters and hiring managers can watch a candidate's corresponding interview and make their own evaluation. Video-based and game-based assessment scores provide crucial decision support for recruiters and hiring managers, but they do not take away their discretion.



The large amount of data available from these two assessment types also means each candidate gets assessed more fairly. As mentioned previously, the large dataset available from video responses and gameplay means adverse impact can be mitigated without affecting the accuracy of the assessment. And with insight into a range of different competencies, recruiting teams can make hires with complementary aptitudes - hiring to reflect the complexities of the modern workplace.

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THE CANDIDATE'S PERSPECTIVE MATTERS:

THE IMPACT OF CANDIDATE EXPERIENCE

Ten years ago, candidate experience was not a concern when considering a pre-hire assessment. The labor market was saturated with top-tier talent ready and willing to wade through complex hiring processes. In today's fast-moving job market it is essential. Most

highly qualified candidates are already employed, and do not need to change jobs. It is critical to make the pre-hire assessment as quick and easy as possible. The best candidates generally do not want to sit through hours of traditional testing.

The candidate experience also has a direct impact on an organization's ability to recruit talent. According to the Talent Board's 2017 Candidate Experience Research Report, 82% of candidates with a great experience said they were "Extremely Likely" to refer others to the hiring organization.³ 44% of candidates with a terrible experience said they would "Definitely Not" refer. There's a secondary impetus for organizations who sell to consumers. 74% of candidates who had a great experience said they would increase their business relationship with the hiring organization. 46% of candidates with a terrible experience said they would sever their business relationship.

By combining two new, validated assessment modalities, talent acquisition departments get the best of both worlds. They can respect the candidate's time with a single, engaging assessment, while gaining crucial insight into the full range of job competencies.

HOW 1.5 MILLION CANDIDATES RATE THE HIREVUE EXPERIENCE

80%
Enjoyed the experience and appreciated the opportunity to differentiate themselves

85%
Thought it reflected well on the employer's brand

70%
Rated the experience as 9 or 10 out of 10

89%
Said it respected their time

CONCLUSION

Pre-hire assessments are a scientifically proven way of evaluating candidates and have a long history of success. But traditional assessment testing has not kept pace with the complexity of the modern workplace. Evaluating the full range of competencies required for job success would require hours of testing with conventional methods. This is neither realistic nor respectful to today's candidate.

Artificial intelligence has enabled the creation of two complementary, validated assessment types. *Video-based assessments* evaluate candidates' responses to video interview questions. These do an excellent job of evaluating candidates' emotional intelligence, communication skill, and personality traits. *Game-based assessments*

evaluate candidates' performance in games. These do an excellent job of evaluating candidates' fluid IQ, visuospatial reasoning, and memory. These can be combined into a single experience to provide complementary insight into the full range of attributes necessary for success on the job in under 30 minutes.

This time-efficient, combined approach increases the likelihood of completion and provides candidates with an engaging experience that respects their time, while accurately and objectively evaluating them on a wide range of job competencies so recruiting teams have the data they need to make the best possible hiring decisions.

The logo for HireVue, featuring the word "Hire" in a white, cursive script, followed by a white star, and the word "Vue" in a white, cursive script.

WWW.HIREVUE.COM

CITATIONS

1 Schmidt & Hunter, 2016. "The Validity and Utility of Selection Methods in Personnel Psychology: Practical and Theoretical Implications of 100 Years of Research Findings".

2 HR.com, 2018. "The State of Pre-Hire Assessments".

3 Talent Board, 2018. "2017 Candidate Experience Research Report".