



# Mastering Psychometric Assessments: A Beginner's Guide for Talent Professionals

Guide



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## INTRODUCTION

# The Importance of Assessments in Today's World

With a population of over 8 billion, today's world is quickly evolving and changing shape. The impact of the global pandemic, economic developments, geopolitical trends, and evolutions in green — and digital technology, are changing the way we live, work and play.

Globally, we are seeing the impact of generative AI (artificial intelligence) on talent recruitment, with 300 million full-time jobs predicted to be at risk of automation because of generative AI. Whilst global skill shortages and the requirements for upskilling and retraining employees are shaping the way companies and institutions think about skill sets and the way education needs to prepare students for the future.

With the vast number of factors at work, gaining powerful talent insight can help us prepare and plan. **It's here that psychometric assessments have an important role to play.**

Assessments in general aim to question, examine, and interpret how areas such as cognition, behavior, personality, and skill sets impact work or life. These assessments are used by over **80% of Fortune 500 companies** as part of their recruitment process to match the best candidates to open positions.



### Did you know?

**50% of companies** are anticipating increased competition for talent, but psychometrics can help reduce the risk of a 'bad hire' and reduce cost.

## Understanding Psychometric Assessments

The aim of psychometric assessments is to objectively assess candidates without bias and provide a score upon which candidates can be fairly compared. They can be used at various stages of the recruitment process to source and select hires.

Reliable assessments are scientifically developed and backed by research that demonstrates their validity — or the appropriateness of a specific assessment tool for a defined purpose. Tools with higher **validity** enable recruiters to more accurately identify those candidates who are likely to go on to perform well in the job.

There is now **over 100 years of scientific evidence** on the effectiveness of different tools that can be used in the recruitment process. This evidence is based on the association between evaluations of candidates made during the recruitment process and how they subsequently perform in the role for which they are hired.

Research highlights that **over 70% of performance** can be predicted by using the right psychometric tools. Normative information from technical manuals can help professionals gauge how candidates compare based on region, age, and demographics, among other factors.



Today, many assessments are available digitally. Using online platforms to examine and interpret the results provides clear data points upon which decision-making can be based. This digital approach also reduces bias and the risk of error.

## Benefits of Using Psychometric Assessments

Psychometric assessments offer several benefits for both companies and candidates.

**Greater Insight into Candidates** - It's widely reported that job performance is impacted by key factors like skills, qualifications and experience, cognitive ability, personality fit, and motivation, values, and interest. But many recruiters only assess skills, qualifications, and experience during the interview process, thereby missing insight into key areas. Psychometric assessments can fill this all-important gap in the recruitment process. **"78 percent of HR professionals"** have seen an improvement in the quality of their hires due to the use of assessments.

Using talent assessment platforms such as **Role Assessments** from Pearson TalentLens, it's now possible to combine ability, personality, and other relevant assessments to create a custom test based on your specific role requirements. With this tool, companies not only gain more relevant information upon which to base a hiring decision but reduce the risk of screening out top talent too early. To help achieve this, recruiters and hiring managers will need to have a sharp vision of what they want to achieve through psychometric testing and their future hiring objectives.

**Reducing Risk of a Bad Hire** - The damage a bad hire causes can be expressed financially - costing (based on current research) around 30% of the final salary of any incoming employee. However, costs could be significantly higher if you factor in

training costs and lost productivity. As a result, recruiting and hiring the right people is now a widespread priority for talent acquisition teams.

**Reducing Employee Turnover** - Once you have your new employees in place, the next issue facing companies is talent retention. **Up to '20 percent of new hires'** leave within the first 45 days (about 1 and a half months) of their new role (**HR News**). Psychometric assessments used during recruitment reduce staff turnover, on average, by 20% - saving companies both valuable time and money. [**Hire Thinking**].

Want to retain current employees? Psychometrics also play a key role in the development of existing employees. **64% of L&D professionals reported that reskilling is a top priority (LinkedIn)**. Tools which focus on ways of learning such as the Honey and Mumford Learning Styles Questionnaire, or provide evidence of a potential to learn, can aid in the selection of employees for training programs and routes for upskilling.

**Predicting Job Performance** - Recruiters need ways to sift through high volumes of candidates without screening out top candidates too early by relying on often-dated methods of recruitment, all while avoiding recruiter burnout!

One way to predict performance is the use of hiring assessments which enable you to focus on the key competencies and skill sets you require. Research from **SHRM** found that **36% of HR professionals** say a "job candidate who scores high on an assessment but doesn't meet the minimum years of experience is very likely to make it onto the list of final candidates". Therefore, companies who value pre-hire assessments are benefiting from greater insight and data-driven hiring decisions.

**Enabling a Skills-Based Hiring Approach** - An increasing number of companies are looking for candidates who have the specific skills they need, rather than focusing on work experience or degrees. 75% say hiring, promoting, and deploying people based on skills (vs. tenure, job history, or network) can help democratize opportunities (Deloitte, Organizational Skills-Based Hiring).

Adapting your recruitment process to use a talent platform such as Role Assessments enables psychometric tools to be sent out to a wider pool of candidates at the same time - increasing access to top talent. By improving your search and confidently narrowing down your candidate pool, you can reduce the risk of screening out candidates too early. As a matter of fact, research shows that companies with a skills-based approach are 107% more likely to place talent effectively and 98% more likely to retain high performers (Deloitte, Navigating the end of jobs).

**Reducing Unconscious Bias** - Considering variations in personality, values, and learning styles is particularly important. Including psychometric tests in your recruitment process can help to reduce bias by introducing a standard and objective decision-making process.

More than ever, recruitment processes need to be transparent and relevant and offer candidates the opportunity to perform to the best of their ability.



## The Science Behind Psychometric Assessments

Psychometric assessments are underpinned by test validity and reliability. Two related but separate concepts which provide confidence in the use of tests.

**Score Reliability** - The reliability of a test is a measure of the consistency of scores – the extent to which two people of the same ability or the same person tested on different occasions will receive the same score.

Reliability is expressed as a coefficient which ranges from zero to one. The closer the reliability coefficient is to 1.00, the more reliable the test and the less measurement error there is associated with test scores. When tests are used in employment contexts, reliability coefficients above .89 are generally considered excellent, .80–.89 good, and .70–.79 adequate. Values below .70 suggest the test may have more limited applicability. For example, it might be used to provide developmental feedback, but would not be appropriate for making selection or promotion decisions.

**Validity** - Validity refers to the degree to which specific data, research, or theory support the interpretation of test scores (AERA et al., 1999). "Validity is high if a test gives the information the decision maker needs" (Cronbach, 1970). **Construct validity** is the extent to which the test measures the trait it's designed to measure. **Criterion validity** is the extent to which a measure is related to an outcome, as in job performance or the pass/fail of a course.

While there is no set standard for interpretation, a .2-.35 validity score can be considered useful while .35 or above can be considered a highly effective measure of validity.

It's also important to keep in mind that values for reliability estimates are lower because job performance can be difficult to measure.

## Different Types of Psychometric Assessments

Psychometric tests can be divided into:

- 01 Personality Assessments
- 02 Cognitive Ability Tests
- 03 Emotional Intelligence Assessments
- 04 Skills and Aptitude Assessments
- 05 Job Fit Assessments

**Personality Assessments** - Personality assessments play an important role within both staff recruitment and development. They can be used within a recruitment context, on-boarding, and employee or team development. The personality test will evaluate the traits of a person's character, their behavioral profile and their motivations and values.

They can supplement the information found on a candidate's CV by providing objective insight into how the individual may fit within the team and company. Personality can be assessed using tools such as **SOSIE 2nd Generation**, offered by Pearson TalentLens.

**Cognitive Ability and Aptitude Tests** - Cognitive ability tests look at an individual's reasoning, learning abilities, and general intelligence. These skills are essential for areas such as problem-solving, complex decision-making, abstract thinking, and numerical skills.

As such, a cognitive ability test can comprise of numerical, verbal, and non-verbal tests. Cognitive ability can be assessed using tools such as Pearson TalentLens' **Raven's Adaptive**, one of the most renowned non-verbal tools of cognitive ability, the **Watson-Glaser Critical Thinking Appraisal**, which focuses on critical thinking skills, and the **Bennett Mechanical Comprehension Test**, which measures mechanical reasoning and spatial perception.

**Emotional Intelligence Assessments** - Emotional intelligence assessments aim to look at how an individual understands, processes, and regulates their emotions. These assessments also examine how an individual may perform within teams, particularly in leadership roles.

With research showing that "90% of top performers are also high in emotional intelligence" (WEF, 2020), it's no surprise EI is often listed as one of the most in-demand skills.

EI assessments involve answering a series of statements, from which the results are broken down into a series of competencies of emotional intelligence.

Top assessments provide recruiters with a breakdown of the scores, as well as explanations of the competencies and areas in need of further development.



**Skill Assessments** - Recruiters looking to focus on specific skill sets may opt to use hard skill tests which assess if a candidate has the skills needed to carry out a role. These assessments provide insight into a candidate's proficiency for completing certain tasks. For example, many councils or boards issuing taxi permits will look for an Language Proficiency assessment such as **Versant** to be completed by applicants.

**Job Fit Assessments** - Job fit has been traditionally measured during interviews, which leaves hiring decisions open to subjectivity and bias. By combining interviews with psychometric assessments, recruiters can a data-based profile of a candidate to inform make hiring decisions.

Talent assessment platforms such as **Pearson TalentLens Role Assessments** put together a custom assessment based on your specific job requirements. Automatically scored, our objective

assessment will instantly provide a fit-to-role score that is ranked against other applicants who are being considered for the same position.

This information enables wider talent pools to be assessed, reduces hiring costs and shortening a company's time-to-fill. With increasing pressure on hiring managers, job fit assessments are increasingly becoming skill focused vs experience based, meaning the role of psychometrics is invaluable for pinpointing areas of fit and potential.

## How Psychometric Assessments Work

### The Assessment Process

The delivery of psychometric assessments will depend on the type of test and provider. With that in mind, there are still some key actions that a Hiring Manager will need to take, as well as common elements that a candidate can expect to experience.

**Test Administration** - It's essential that the Hiring Manager knows what data they wish to obtain and how it relates to the role in question. Your test provider can then work to identify which test(s) are most suitable and how you wish to deliver them. Many tests are offered as fully remote and online experiences in which a candidate accesses the test via a link included in an invitation email.

Some psychometric assessments can also be delivered in person via pen and paper and/or under supervised conditions. If a psychometric assessment is being delivered in person, it's best practice to set up an examination room to avoid disturbances and ensure any necessary equipment is in working order.



With either method of delivery, recruiters and hiring managers should be familiar with the test procedures to clearly communicate with candidates on how to access and complete the assessment.

Several psychometric tests also require before they are administered and scored. If this is the case, training courses and any required coursework can often be found via the test provider's website.

**Scoring and Interpretation** - Scores for psychometric assessments are presented with additional context in an individual's test report to provide a clear picture of how that candidate performed in relation to the measured criteria and norm group.

### **You can expect a psychometric assessment report to include:**

- » **Raw Scores** - Unadjusted score that may refer to the number of items answered correctly in an aptitude or ability test.
- » **Standard Scores** - Test score that directly shows where a candidate lies in comparison to a norm group.
- » **Percentile Scores** - A converted score that shows where the individual score sits within the context of a larger norm group – worse, as well as, or better than.
- » **Z-Scores** - Score that uses standard deviation to measure how outstanding an individual is relative to the mean of a population.
- » **STANINE** - Standard Nine scores are standardized scores based on a 9-point scale, with a mean of 5 and a standard deviation of 2.

- » **T-Scores** - Standardized scores used to compare a test taker's results. A T-score has a mean of 50 and standard deviation of 10.
- » **STEN** - Standard Ten scores are standardized scores based on a 10-point scale, with a mean of 5.5 and a standard deviation of 2.
- » **Theta Score (Ability Score)** - score that considers the difficulty level of each item or question in the assessment.

Depending on the assessment and platform used, a Profile, Interpretation or Development Report can also be generated. With online assessments, the reports are automatically generated with scores based on the norm criteria selected at the outset.

Remember, an individual's scores should be compared to the appropriate norm group to obtain an accurate profile of his or her ability; and it's important to integrate test results with other assessment information collected to obtain a more complete picture of the candidate.

### **Pearson TalentLens Role Assessments**

platform takes this one step further to provides:

- » **Individual Ranking** - Where candidates are ranked by the overall job fit.
- » **Cognitive Fit** - Calculated by comparing each candidate's scores with the ideal job profile.
- » **Work Style Fit** - Calculated by comparing each candidate's scores with the ideal profile.
- » **Overall Fit** - Score that averages the work style fit and the cognitive fit.



# Designing an Effective Psychometric Assessment

## Item Development

Item development takes place in three main stages:

- 01 Item Banking
- 02 Item Piloting
- 03 Data Analysis

**Item Banking** - Item Banking: Item banking allows for the efficient and cost-effective development and administration of tests. It involves bringing together a team of experienced test developers who work with industry practitioners and experts to determine the items and scenarios that need to be tested as part of a new or re-developed assessment.

Where a previous test has already been developed, existing items are reviewed for acceptability. This includes content reviews for business relevance and for international acceptability. New items are often written by experienced items writers, occupational psychologists, or psychometricians who are provided with training, writing specifications, and guides. Items undergo multiple reviews and revisions to ensure that new items are suitable for use. Reviews also look at factors such as fairness and objectivity to determine suitability.

**Item Piloting** - Item piloting enables test developers to test items with a cohort of individuals. Test developers need to collect a certain volume of responses to statistically examine the item's performance and determine whether it can be used. Piloting items is a form

of quality control to ensure items meet the psychometric standards. The data can also be used to create a baseline statistic and identify how they can be improved.

**Data Analysis** - Data analysis is the third stage which evaluates the response data collected to determine what is working well and what needs to be improved. It helps drive the assessment development and its validity. This process provides companies with confidence in the suitability and use as part of a HR strategy.

## Test Norms and Standards

Test norms are what provide the basis for the interpretation of results. A norm group is developed by selecting a sample of people based on specific characteristics. Once this norm group completes the assessment, their scores (norm data) are transformed from a frequency distribution into a standard scale with known properties (i.e., norms).

Candidate scores are compared against the norms to determine how they performed relative to the norm group. The scores provide a standard upon which informed hiring decisions can be made and can help companies benchmark their candidate or employee performance.

Scientific rigor is what often differentiates soft skill assessment providers. Pearson's approach to designing assessments is meticulous, but the underlying concept is simple: we use evidence and research to design our products and solutions. At Pearson, we judge the efficacy of assessments against three Assessment Quality Indicators: validity, reliability, and fairness.

Pearson's assessments are developed according to best practice standards set out by the British Psychological Society (BPS) and European Federation of Psychological Associations (EFPA).

The thorough test development processes help ensure that core psychometric features such as high reliability, high validity, suitable comparison groups, and fairness are upheld.

## Statistical Analysis

All psychometric tests are backed by statistical analysis carried out by psychometricians which provide companies with confidence in their suitability for use. From face validity to criterion validity, each test is underpinned by a series of statistical analyses that ensure the data, items, method of testing and delivery are controlled and meet ethical obligations and are fit for use.

# The Role of Technology in Psychometric Assessments

## Online Assessments

There is increasing demand for talent assessments to be online and optimized for mobile devices. In addition to improving the candidate experience, assessments delivered online have several advantages.

- » **Familiarity** - Today's employees are more familiar with digital and online tools. Taking an assessment on computer or tablet has the potential to improve candidates' confidence with the format and test. It also enables adjustments to be made quickly if a candidate requires an accessible test format such as a larger font size or audio support.
- » **Automatic Scoring** - Results from online tests can be automatically generated into score reports. This provides almost instant data-rich information to hiring managers on a candidate's performance - reducing testing times and administration costs.

- » **Wider Candidate Pool** - When you have access to a wide candidate pool you want to keep them engaged in the process. An online assessment can be sent out via email, enabling hiring managers to reach a wider pool of candidates quickly and easily. Progress can be tracked and issued quickly flagged.
- » **Improved Security** - Online assessments eliminate the need for pen and paper sheets, with data and scores held according to strict regulations. With the use of item banking, online assessments also reduce the risk of candidates seeing the same items.

## Computerized Adaptive Testing (CAT)

Computerized Adaptive Testing (CAT) presents a modern method of delivering tests to job applicants and employees.

### The key features and benefits of CAT are:

- » Each item is assigned a difficulty level and each test taker starts with an item of average difficulty. If answered correctly, they are then presented with a harder item. If they answer incorrectly, they receive an easier one.
- » This process is repeated for each item and ensures an accurate estimation of the test taker's ability level in much fewer items.
- » Items are also drawn from a large question bank, ensuring that the chances of two test-takers receiving the same set of items are minimal. Item-banking reduces the chances of items being over-exposed.

Learn more about CAT and how it works in our [explainer video](#).



# Artificial Intelligence and Machine Learning

**AI is already making an impact in the world of psychometric assessments.** Driven by machine-learning algorithms, AI can assist HR managers looking to source and select candidates from a potentially high volume.

Through the use of AI, HR managers can switch from the traditional face-to-face interviews and the CV process and instead use video-interviews and invite candidates to complete online psychometric assessments and games based assessments where tests can be tailored to role-specific questions and results can be analyzed quickly and objectively. In theory, this has the potential to reduce unconscious bias, however there are also caveats with AI as the information is only as good as the algorithm itself.

*Source: [We Are Tech Women](#)*



# Applications of Psychometric Assessments

34% of HR professionals cited psychometrics as an effective way to improve recruitment processes.

## Hiring and Recruitment

**Pre-Employment Assessments** - Standardized tests which are traditionally used as a method of measuring specific skills, traits, and abilities that are key to the company and role. Talent acquisition professionals and hiring managers are increasingly turning to psychometric tests to predict candidate performance. With the right tools, psychometrics can help predict employee performance with over 70% accuracy.

**Job Fit Assessments** - These tests level up on standalone assessments to measure all the skills, traits, and abilities required for success in a specific role. While standalone assessments typically measure a single skill set, like critical thinking or mechanical reasoning, job fit assessments pull questions from a full library of psychometric tests to create a custom role-specific assessment that measures all the cognitive, personality, and language abilities relevant to that specific role. These assessments also improve the candidate experience by reducing the number of tests candidates must complete during the interview process.

## Talent Development and Training

**Identifying Individual Strengths and Development Areas** - 50% of all employees will need re-skilling by 2025 (World Economic Forum). Psychometric assessments identify an individual's strengths and weaknesses and help L&D team establish development plans.

**Succession Planning and Leadership Development** - There are certain attribute and qualities that make a good leader into a great

leader - including areas such as problem-solving, critical thinking, and emotional intelligence. Psychometrics allow companies to identify employees who have the potential to go further in their roles and move into leadership positions in the future.

**Team Building and Employee Engagement** - With IBM research highlighting that more positive employee experiences are linked to better performance, extra effort at work, and lower turnover intentions, it's important for coaches and L&D professionals to jump-start individual and team development efforts that lead to improvement of individual and collective performance.



## Career Guidance and Personal Development

**Self-Discovery and Self-Awareness** - Using psychometrics to gain insight into what motivates an individual, their values, and how they interact with their team members informs managers and L&D teams where opportunities for progression exist. Research shows that employees are looking for companies who actively care and invest in their development.

**Career Path Exploration** - Psychometric assessments can also help students and professionals plan their careers. Test like Pearson TalentLens' Which Career For Me helps individuals discover what motivates them so they can make the right professional and career choices.

# Ethical Considerations of Psychometric Assessments

## Considerations and Legal Compliance

**Confidentiality and Data Protection** - All psychometric tests should only be used where it's ethically and legally secure to do so. Candidates should be fully briefed on why they are being administered a particular test, and how that data will be kept and stored. All results should be kept confidential and shared where it's suitable to do so. Pearson TalentLens, for example, follows best practice for privacy regulations, including GDPR regulations around data storage and processing.

**Fairness and Inclusion** - It's always important to consider how fairness and inclusion are embedded into your hiring process. With psychometric assessments, your recruitment process surfaces the best people for the role, regardless the background – giving each candidate the opportunity to showcase their fit to the role and company.

### Here are some additional measures you can implement over time to ensure your use of psychometric assessments is fair and ethical:

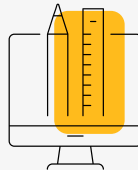
- » Conduct a job analysis at least once every 5 years to determine if changes in role responsibilities require adjustments to your selection process.
- » Undertake, and periodically reassess, a local validation study to establish the criterion-related validity of the assessment.
- » Offer reasonable adjustments to all candidates and provide those who require them a level playing field in the selection process.
- » Combine assessments or use a job fit assessment to reduce any potential bias and improve the candidate experience.
- » Provide a practice test and encourage your candidates to complete it.

## Compliance with Employment Laws

Even though employment laws vary by region or country, companies should always follow best practices in the administration, interpretation, and security of psychometric tests. Some of these best practices include:



**Ensure candidates are fully briefed on their application.**



**Administer the tests in a consistent manner for each candidate.**



**Offer reasonable adjustments to ensure a fair test experience.**

In addition, the assessment provider you select will have additional information on local or regional requirements you need to fulfill.

## Conclusion

There's no avoiding the pace at which jobs are evolving, and along with them the skills required to succeed. To keep pace, companies need effective methods to source, identify, and select talent who have the right skill sets, abilities, and values.

Psychometrics assessments are a reliable and trusted method to help recruitment and hiring managers gain the insight they need to make the right decisions. This deep insight into skills, personality, behaviors, and motivations enable recruiters to obtain a crystal-clear picture of their talent pipeline.

Advances in technology and new applications such as AI have the power to become essential tools. Engaging candidates in new ways and offering companies richer data insights will help businesses gain a clearer picture of a candidate's fit and their future potential. With the correct application, psychometric assessments can help future-proof your workforce and power your talent strategy for decades to come.



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## Want to Learn More?

If you want to learn more about psychometric assessments and how they can improve your talent acquisition process, reach out to the Pearson TalentLens team today.



## About TalentLens

TalentLens is a core component within the newly established Workforce Skills division of Pearson plc, the world's lifelong learning company and global market leader in assessments. Workforce Skills is comprised of TalentLens - Pearson's established and successful workplace psychometrics team, plus two exciting new acquisitions, Faethm AI – the world's first data backed and truly end to end future of work company and Credly, the global leader in digital credentials.

Supported by over 70 years of research, our psychometric tests, such as the Watson Glaser test, are used by hundreds of companies around the world for their employee recruitment and development projects. As experts from the business world, our primary objective is to provide you with ongoing assistance to review your practices, understand and define your needs, and support you in choosing and using our assessment solutions.