central test
EMPOWERING TALENT

CALCULATION OF MATCHING SCORES

Explanatory document

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Introduction

The predictive model, developed by Central Test, is a unique competency model that allows you to associate success criteria to a targeted position or role with competencies that meet your specific needs.

The construction of a predictive model, whether it's standard (created by Central Test) or customised, is based on millions of data points from the internationally recognised O*Net and ESCO competency and job referentials, including the latest updates (2022).

The Central Test model is then combined with the results of our psychometric tests via a multi-criteria approach in order to help you identify the right profile for your requirements more effectively, or to support individuals through career guidance or development.

In this document, which complements the reference guide to the predictive model, we present the principles for calculating the matching scores for a comprehensive understanding of our competency and job references resulting from the assessments.

What are the criteria for defining the scoring methods?

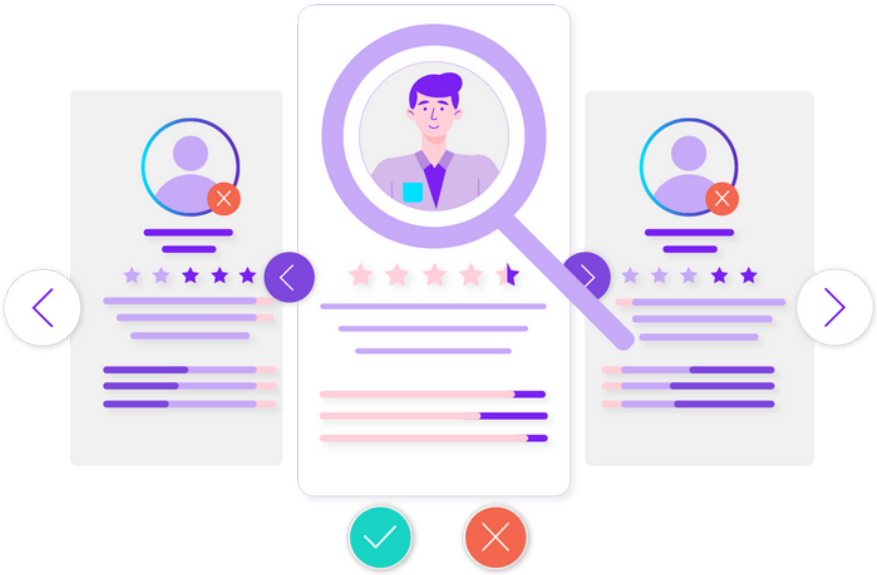
Predicting potential is complex by nature, with all the subtlety linked to psychology and human beings. As a result, we will look firstly at the criteria taken into account in the development of the scoring methods used for the potentials and professions assessed in the Predictive Model.

The scientific exhaustiveness of the scores: all scores for skills, values or predictive models, are derived from a weighted average of the scores obtained per trait, from the relevant test(s). From this a raw score is established which is not published in the reports.

The criterion for differentiating scores: to facilitate diagnosis, guidance and decision-making the raw scores are transformed through a calibration of the scores**, in an inter-individual way, to better compare between candidates , as well as intra-individual, to better differentiate between one candidate's potentials.

The "candidate experience" criteria: for this, we take into account the perception of the candidate, and how they will perceive the scores when they are communicated to him/her (subject to ensuring that the first two criteria above are respected).

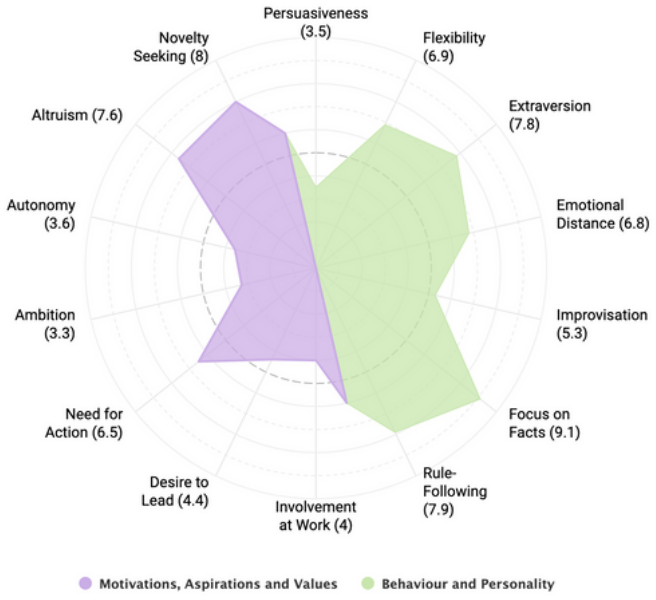
Certain trade-offs can be made between these criteria, in order to obtain exhaustive, differentiating and "candidate-centric" scores, focused on the user experience.



Which scores are we talking about?

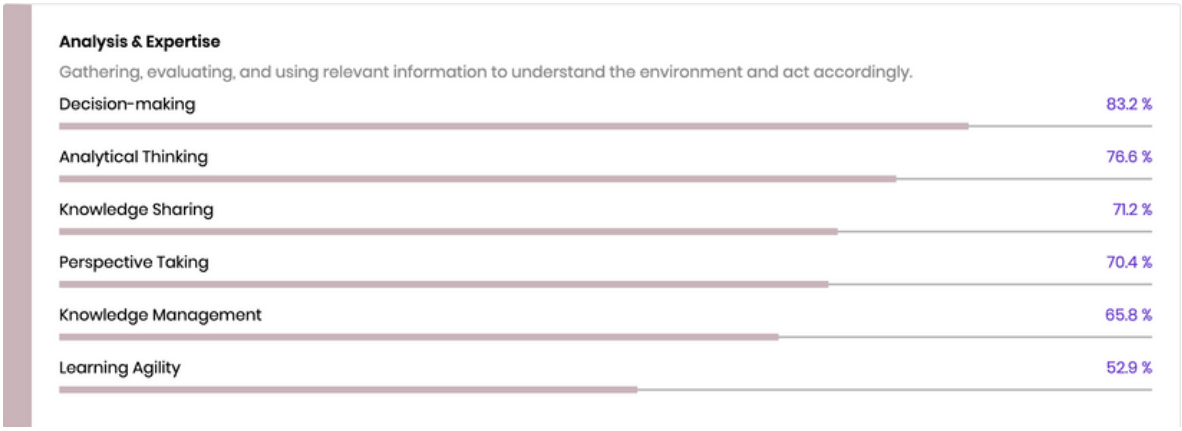
Trait scores assessed in each test

Our psychometric test evaluations make it possible to establish scores for an individual's traits, as well as various indicators (social desirability, etc.), which are fixed and cannot be updated for tests taken in the past.

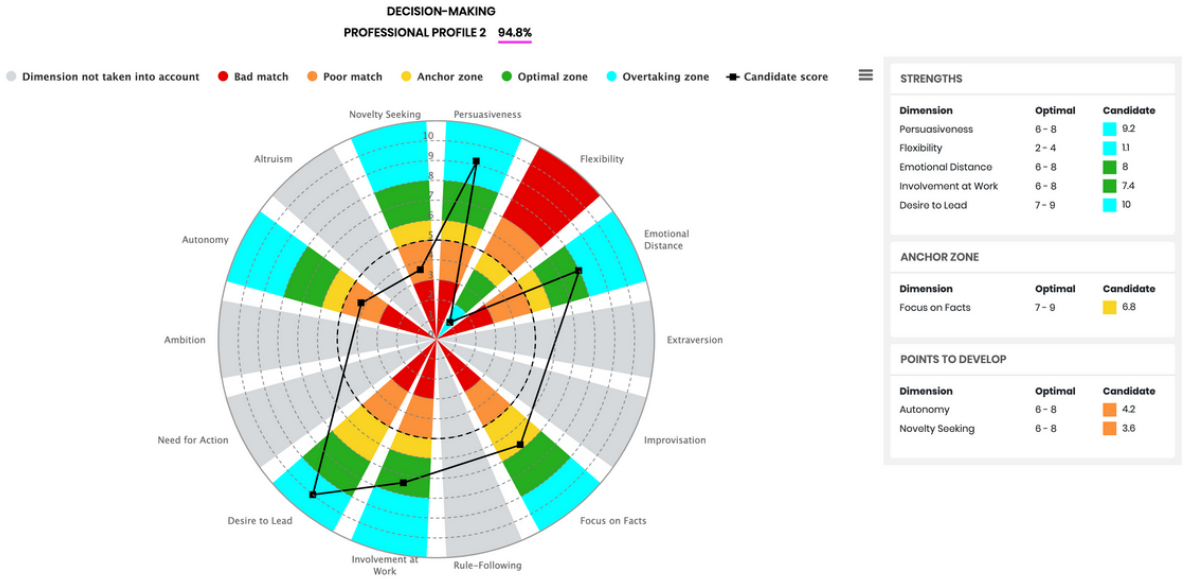


Competency scores

Competencies or potentials are calculated from the trait scores of these tests. You can explore our standard referential of 63 competencies, differentiated slightly by the candidate's profile type (generic, commercial, manager), as well as define your own custom competencies by configuring them from the traits measured in our tests. Standard or customised competencies are available from the Talent Map, which centralises the competency referential from one or more tests, or from a test report.



To look at these competencies in more detail, you can view the associated traits for each skill, for the corresponding test from which the skill was calculated.



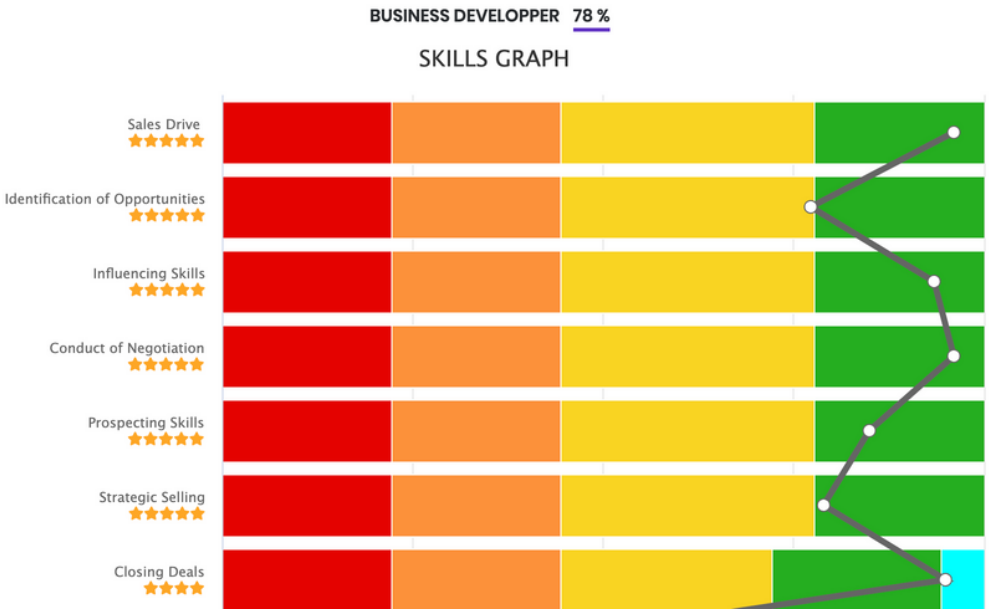
Corporate values scores

Corporate values reflect the candidate's main workplace values, which you can also customise. These values are not currently taken into account in predictive models. However, as with competencies, you can view the breakdown of the value in terms of it's corresponding trait profile, for the associated test(s).

Predictive Model Scores

The standard or customised occupations, called Predictive Models, correspond to single competency models divided by degree of importance over 5 levels.

From within the Talent Map, by clicking on the job score, or from a Talent Matcher campaign, you can view the competency model associated with a predictive model, where the candidate will be ranked for each targeted competency (see the shaded line on the image of the competency graph). The levels of importance of the competencies, in relation to the model in question, are symbolised by stars on the left.



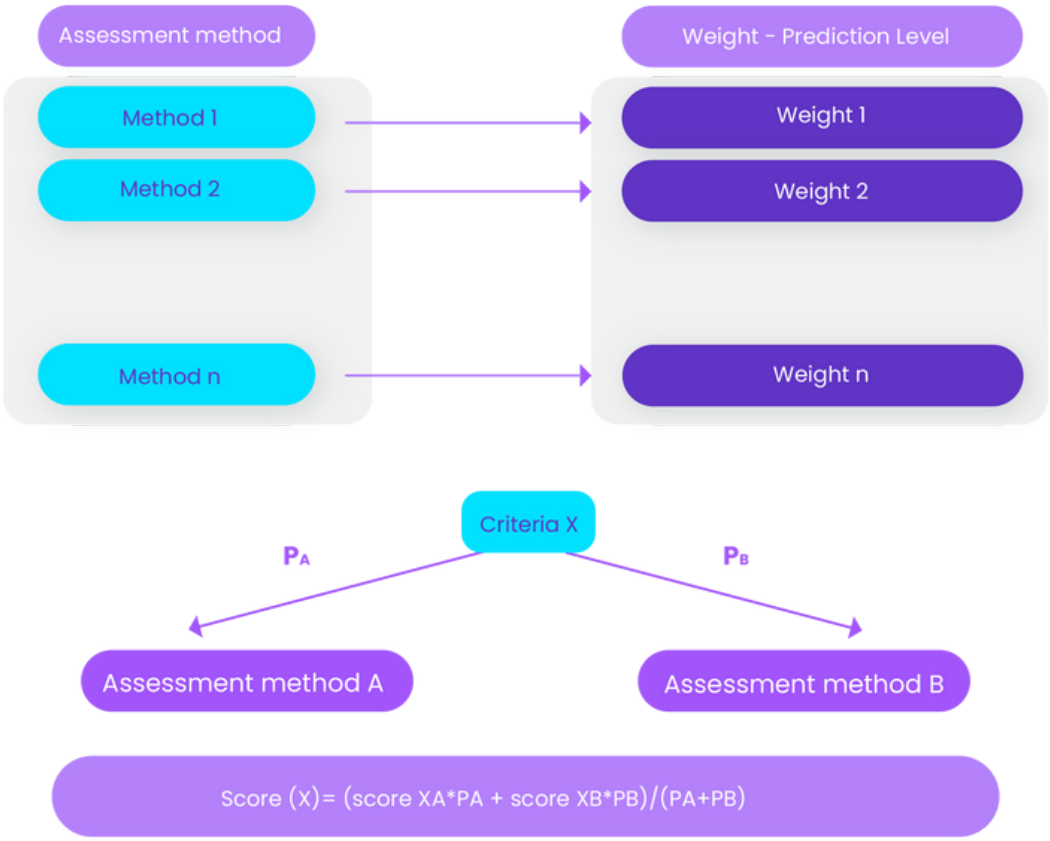
As with a competency or corporate value, you can view the trait graph of the relevant test(s) for a predictive model. This trait profile is designed to be indicative, and corresponds to the average of all traits associated to each competency relating to the model in question.

How are competency scores calculated?

Competency scores are calculated from the traits of the psychometric tests via a weighted average, by level of importance of the associated traits, thus establishing a raw score. The more important a trait is to a competency, the more weight it will have in determining that competency's score.

The raw score is then calibrated according to the configurations of the associated traits and the theoretical average for the targeted competency, in order to provide an evaluation that is dispersed across candidates according to the principle of normal distribution. The overall average of the candidates for all standard and calibrated competences is between 50% and 55% depending on the test.

If several tests are combined, an average of the competencies per test is calculated. This is then weighted according to the specific weight of each test in relation to the targeted competency.



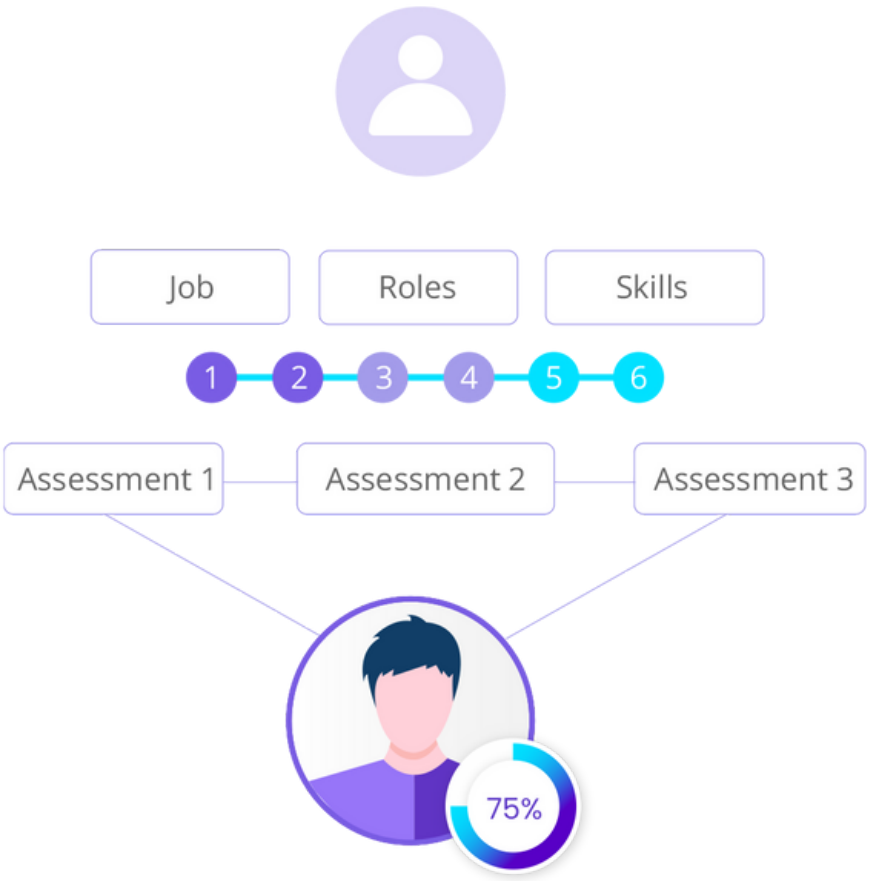
How are predictive model scores calculated?

The predictive model scores are calculated from the candidates' competency scores, using a weighted average that is determined by competency importance. The more important a competency is for a predictive model, the more weight it will have in the score for that predictive model. The raw score for a predictive model, for both standard or customised, is thus established.

A calibration is also applied to the predictive model raw scores, to ensure that there is dispersion in the scores. The overall average of candidates for all standard jobs is between 50% and 55% depending on the test.

If several tests are combined, the predictive models are then recalculated on the basis of all the competencies resulting from the combination of the different assessments.

Job matching is thus calibrated against a population that has taken the same assessments. For example, a score of 70% means that the candidate is among the 30% of candidates with the highest scores, which is an indicative score that when interpreting, should be supplemented by an overall understanding of the candidate's profile and ideally a debriefing with the candidate.



Score adjustment

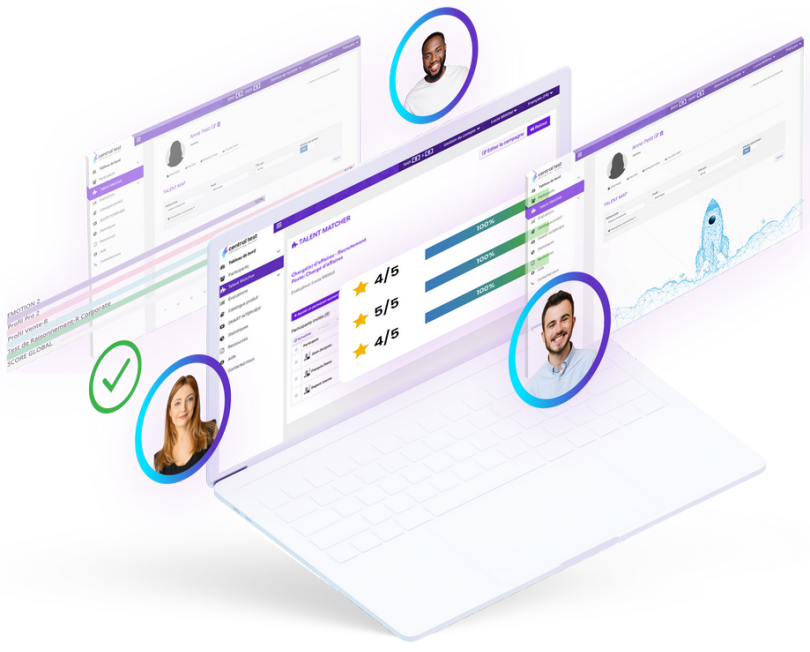
Candidates will not all have the same average for every job as this average depends on their competency scores, which may be higher or lower overall from one candidate to another.

Indeed, some candidates with higher scores on traits which are more frequently valued in the competencies, such as logical reasoning, certain emotional intelligence traits, or certain personality traits, have higher overall scores on the standard jobs, compared to the general population.

This difference can be explained by the nature of the competency referential which tends to privilege certain traits, known as "popular" traits, such as emotional distance / emotional sensitivity. Likewise, any other competency framework available on the market would tend to favour certain traits that would better reflect the competencies in general.

In order to allow for greater fairness between candidates, while ensuring a balance between intra-individual and inter-individual differentiation of matching scores, a partial adjustment of scores to competencies and predictive models is applied.

This correction is intended to better balance the scores of candidates with either lower or higher scores on “popular” traits, while maintaining their respective initial differences.



How are the predictive models constructed?

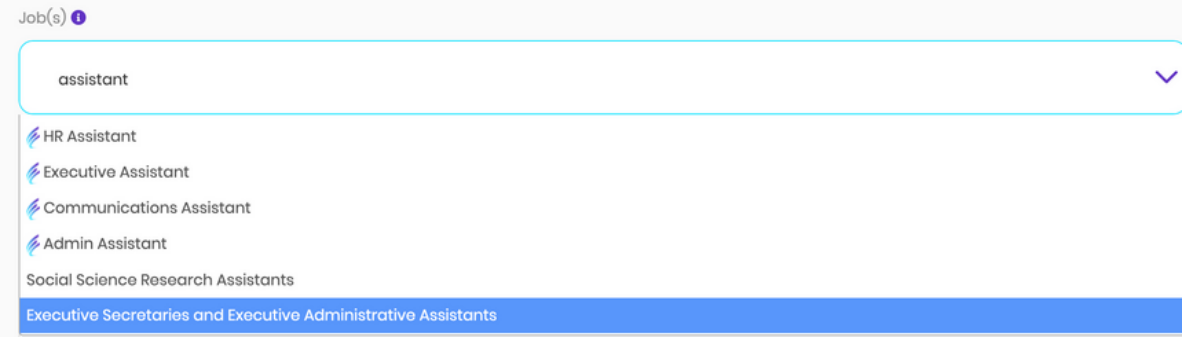
From the O*net job clusters (of approximately 900), we build competency frameworks based on the 61 competencies of Central Test, and classified by level of importance from 1 to 5.

This association is made by linking our Talent Map competencies with the O*net criteria that defines each O*net cluster.

By associating these criteria with each Talent Map competency, we derive competency scores. The levels of importance of the clusters are then deduced from these basic scores, and the number of skills shown is limited to the top 20 and subject to algorithms developed by Central Test. Each cluster is therefore associated with a predictive model.

Central Test's 156 standard jobs, available from the Talent Map, are then built from these skill models, by associating our jobs with one or more O*net clusters.

In the same way, when you create your personalised predictive model, you can select one or two reference jobs, either from the standard jobs (identified by the Central Test logo) or from the O*net clusters.



The functions (sales, management, communication, marketing, etc.), which you can use alone or in combination with business lines, are predictive models derived from a combination of representative clusters. They facilitate a more global approach in the determination of your custom predictive models, while also allowing you to perform a targeted analysis around a specific role (management, sales...).

Reminder of statistical concepts

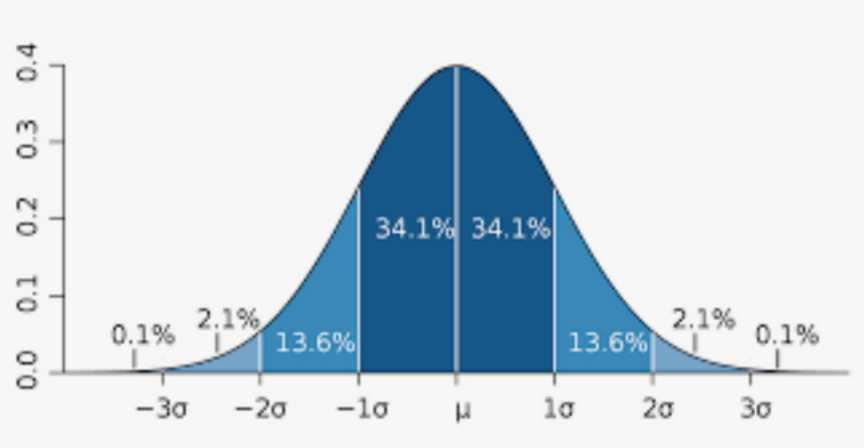
***Weighted average:**
to calculate this average, each numerical value is assigned a coefficient called a "weight". It is the same principle as for the results of high-school degree where the overall mark is the average of the marks for the subjects affected by a different coefficient.

$$W = \frac{\sum_{i=1}^{n} w_i X_i}{\sum_{i=1}^{n} w_i}$$

W = weighted average
n = number of terms
w_i = weights applied to x-values
X_i = data values

The basic predictive model scores are based on weighted averages, i.e. skill scores from traits, predictive model scores from skills, or indicative trait profiles for a predictive model.

**** Calibration:**
A calibration transforms an individual raw score into a calibrated score, in order to better compare the positioning of an individual to the general population. In psychology, as in natural phenomena, the scores are distributed according to a so-called normal law, as for the IQ, whose average is 100. Standard deviation then measures the tendency for scores to be dispersed. The higher the standard deviation, the more dispersed the scores. The lower the standard deviation, the more concentrated the scores are around the mean.
For scores from 0 to 100, the theoretical mean is 50 and the standard deviation is 16 points, around which 68% of the population is distributed.



Calibration can be used to compare similar populations, for example, norming by gender, age or education. Calibrations are thus available in the test manuals according to the relevant sociological criteria.
In the predictive model, calibrations are used for the transformation of raw competency scores and predictive models.

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