



A brief guide to university admissions tests

Achieving fairer and more successful candidate selection

A more complete picture of success

Each year graduate and undergraduate institutions are challenged with selecting which applicants to admit for study within their institutions. Various criteria – previous grades, interviews, references, writing samples - are used in the admissions process, the goal of which is to select those students most likely to succeed in a chosen course. Having more than one data point upon which to make admissions decisions typically improves the predictive validity of these decisions.

Standardised admissions tests are increasingly used in public and private universities around the world as a means of providing a better overall predictor of an applicant's ability to succeed in a chosen course. Validity studies from the United States indicate predictions of university grades may be improved when standardised admissions tests are considered in addition to previous grades.

Admissions tests provide an objective performance measure to assist with the difficult task of comparing the qualifications of all applicants. They are particularly useful when there is a large pool of applicants competing for places. They are also useful in identifying students with a particular talent. For example, research has shown that spatial reasoning ability is important to success in STEM (science, technology, engineering, and mathematics) domains. Inclusion of a battery of standardised reasoning tests (such as verbal, quantitative and spatial) in admissions decisions will aid in identifying intellectually talented individuals who may have otherwise been overlooked.

Admissions tests can also aid in the mission of an academic institution to widen access. They provide an additional

opportunity for applicants from disadvantaged backgrounds to establish their potential to do well in university. For students who have not had the opportunity for one reason or another to demonstrate their academic ability in pre-university settings, admissions tests provide a way to supplement measures of past achievement in making admissions decisions.

Knowing what to test

Admissions tests are not typically the sole determinant for admission, rather they supplement other admission criteria, such as exam results and interviews. As such, the goal of admissions testing is to provide additional supporting evidence of the likelihood of success in the specific course of study and aid in creating an equal playing field, regardless of an applicant's background. The make-up of a specific admissions test may vary according to the course of study and other selection criteria. The key to determining what to test is firstly, what knowledge, skills and abilities are integral to academic learning, in general, as well as to the specific course of study. Secondly, what additional information gained through admissions testing can contribute to a better picture of applicants' likelihood of success when considered in concert with other factors in the admissions process.

Admissions tests and other selection criteria can be placed along a continuum according to their connection to a previous curriculum.

At one end of the spectrum are admissions tests which include one or more aptitude components, such as critical thinking or reasoning. Lohman (2012) asserted that the most important characteristic for academic learning, aside from knowledge and skill in the academic domain, is "ability to go beyond the

The aptitude-achievement continuum related to admissions selection.



Note. Adapted from Lohman (2004). Aptitude for college: The importance of reasoning tests for minority admissions. In Zwick, R. (Ed.), Rethinking the SAT: The future of standardized testing in university admissions (pp. 41-54). New York: Routledge Palmer.

information given; to make inferences and deductions; and to see patterns, rules, and instances of the familiar to the unfamiliar” (2012, p.6). Because academic learning relies heavily on reasoning with words and with quantitative symbols, Lohman put forth that the critical reasoning abilities for all students are verbal and quantitative.

Depending on the course of study for which the admissions test is being used, it may also be beneficial to test knowledge and skills that are more closely aligned to a prerequisite academic curricula. These types of admissions tests are more reflective of an applicant’s level of achievement gained through previous study. An example of this type of admissions testing would be assessing knowledge of biology and chemistry for admission to medical school.

Using test scores

Admission test scores can be applied in a number of ways, from a percentage of the final decision, a screening criteria for the interview process to a minimum cut-score that must be obtained. The application of score somewhat depends on the other components of the selection process which might include prerequisite grades, letters of recommendations, and personal statements or interviews.

Examples of differing admissions tests

1. The Graduate Management Admissions Council’s GMAT, which is particularly aimed at MBA applicants combines verbal, mathematical and analytical writing skills
2. The GAMSAT (Graduate Australian Medical School Admissions Test) combines reasoning in humanities, social, biological and physical sciences along with specific recall and understanding of basic science concepts
3. UKCAT, a medical & dentistry test in the United Kingdom, combines five separate aptitude components

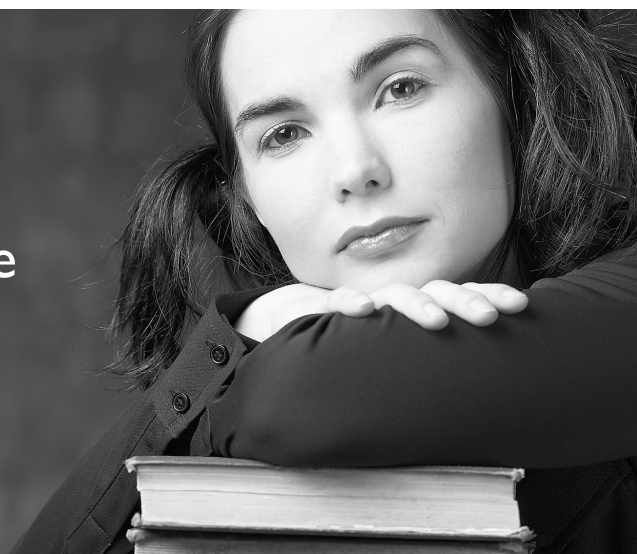
Admissions tests frequently contain a battery of subtests, or sections, assessing different traits. For instance, an admissions test could contain verbal, quantitative and non-verbal reasoning sections. In this case, what role the individual subtests or sections plays in the selection process must also be considered. Lohman (2012) discussed three ways sectional scores may be used:

1. The ‘and’ rule: The applicant must score above a minimum cut score on all sections to be considered for admission.
2. The ‘average’ rule: All sectional scores are averaged and the applicant must score above a minimum cut score with their averaged score.
3. The ‘or’ rule: The applicant must score above a minimum cut score on at least one of the sectional scores.

Each of these methods can lead to dramatically different numbers of applicants achieving the cut score and different decisions as to who is admitted and who is not. The ‘and’ rule is the most restrictive. The ‘average rule’ ignores distinct information if the sectional scores reflect dissimilar applicant traits. Both the ‘and’ and the ‘average’ rules may overlook individuals who are talented in one particular area. The ‘or’ rule may be the most appropriate if the sectional scores assess different traits; application of this rule may assist in identifying individuals with a particular talent or aptitude.

One consistent need, regardless of the make-up of an admissions test and how its scores are used in the selection process, is that of ensuring it is valid, fair and reliable.

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Test validity

Validity concerns the extent to which the available evidence suggests that the interpretations of test scores are appropriate for a particular use. Certainly, there have been many studies examining how well scores on admissions tests predict future academic performance. Considering these studies, Zwick (2006) reported that there was evidence that admissions tests, both undergraduate and graduate, can be useful in predicting grades, both in the first year of study and beyond. In particular, predictions of first year grades were improved when test scores were considered with prior grades.

Predictive studies are a type of post hoc validation of admissions test results. Also essential to the validity is the way the test is designed and developed. Following international best practices in content development and measurement science are two of the methods of providing evidence of the test score interpretation.

Test reliability

Reliability refers to consistency and stability in test results. To be sure that test results are consistent, a candidate should be able to take either the same test without further preparation or different versions/forms of the same test and get similar results. A number of factors influence reliability, such as test length, question (item) quality, and relationships between items. There are also a number of factors within the actual test environment which affect reliability, and these can prove especially challenging to standardise.

Examples of computer-based admissions tests

Pearson VUE partners over 450 global high stakes test programmes, which include a number of academic or admissions programmes. Admissions tests can be seen as high-stakes, since the outcome is critical for both the future of the applicant and indeed the institution.

Test fairness

An admissions test must be fair to all candidates regardless of gender, ethnicity and socio-economic background. A fair test is one in which candidates of an equivalent ability level receive test scores that are equivalent. To achieve this, the admission test must be carefully constructed so that:

- Test results are comparable across time, test administrations, and the different exam versions that may be administered to candidates;
- The test does not disadvantage certain groups of test takers by using words or references that are clearly more familiar to some candidates because of their nationality, ethnic group, etc than they are to others;
- The test administration, scoring and other procedures are applied consistently across all candidates;
- All candidates have the same opportunities to prepare for taking the test.

Widening participation

As a predictor for likely future performance, an aptitude test can be particularly useful in identifying applicants who may not have enjoyed the same opportunity to learn in the past, but who have the ability to perform well given the opportunity. In 2012, research conducted by the universities of Durham and Dundee (Tiffin, Paul A, Dowell, Jonathan S, McLachlan, John C, 2012) found that the use of UKCAT may lead to more equitable provision of offers to medical school applicants from under-represented sociodemographic groups, particularly amongst those who placed greater emphasis on the test scores as a key component of their admissions process.

This number of new admissions programmes has grown significantly in the past few years, with Pearson VUE delivering a staggering 1.8million academic and admissions tests in 2014 alone.

We partner a range of admissions programmes, from subject specific such as the Graduate Management Admissions Test (GMAT) for an MBA at over 5,000 schools worldwide or the

Law National Aptitude Test for entry into a number of UK law schools to consortium tests such as UKCAT (medical and dentistry schools in the UK) and even university specific such as the Shiv Nadar University general admissions test, which is used across all of its programmes.

Candidate convenience

Computer-based testing makes for a far better experience for the applicant, a more robust, secure and streamlined experience for institutions as well as incorporating best practices for the science of test measurement. Firstly, by using a computer. They can also use a PC, laptop or mobile to register and schedule their test at a time and place that is convenient. Of course, there are various degrees of convenience and with a global test centre network, candidates can schedule and take a test within defined windows from a few weeks to months.

For example, Pearson VUE successfully transitioned the Narsee Monjee Institute of Management Studies' (NMIMS) admissions test from a single-day-single-sitting pencil-and-paper based examination to a computer-based examination in a ten-week test window. This has given much greater convenience for the candidate whilst helping to reduce candidate stress. A modern Item Response Theory-calibrated item bank has been built, allowing secure testing throughout that window. (Item response theory is a modern statistical method for analysing and scoring tests that has become the standard for high-stakes testing.) The introduction of a re-take facility for the NMAT allows candidates to re-appear for the test, with up to two re-takes allowed, providing them an opportunity to improve their scores.

Similarly, through UKCAT's partnership with Pearson VUE, there is a testing window from July to October each year, with registration opening in May. Pearson VUE also supports the full marketing and communications, including websites for UKCAT, NMAT and LSAT - India.

Why use a testing centre network?

A test centre network provides a neutral and consistent testing experience which supports both reliability and fairness in testing, closer to a candidate's home. The highest levels of security are employed for the protection of test items, to minimise cheating and brain dumping and even candidate impersonation. Test centres employ a combination of security measures such as CCTV, trained invigilators, secure lockers for all personal possessions, photo-capture, digital signature and robust procedures to fight against fraud.

Of course, candidates benefit most from a quiet, test-ready environment that gives them the best opportunity to succeed. With over 5,000 test centres to choose from – and additional networks that can be set up in country – it also provides the greatest level of convenience to candidates.



“The introduction of a re-take facility for the NMAT allows candidates to improve their scores.”



Test Security – Securing examination integrity

The increasing number of test takers globally also increases the risk of potential examination frauds. Such frauds not only tarnish the credibility of the test, but also reward undeserving candidates.

Pearson VUE's comprehensive, strategic approach to security – the “Secure Testing Framework™” – is a comprehensive, strategic approach to integrating security throughout systems, processes, and services to protect the integrity, availability and confidentiality of clients' test programmes, including related intellectual property and personal data. The framework is comprised of four interlocking elements, each of which offers layers of prevention, detection and enforcement / response capabilities: a controlled testing environment, global identity management, information protection and forensic services.

Reporting

Timely automated reports help clients to get real-time information to monitor their test and take the necessary corrective action to improve programme success. Information such as candidates' details, exam-result data, item / question level data, test delivery reports, registration reports, test centre capacity utilisation etc. is readily available. Such data helps universities and test owners make more informed decisions to grow their programmes and improve profitability.

Programme growth

Pearson VUE has broad experience of growing programmes both globally and locally. The GMAT test is now used as a selection tool for more than 5,000 programmes worldwide and taken by over 250,000 candidates every year. The partnership has helped grow the GMAT test by 37 percent and it is now available in 110 countries.

In India, Pearson VUE has helped almost double the number of NMAT tests, the entrance examination to NMIMS, by implementing global best practices. The partnership has also

helped NMIMS improve the quality of candidates, through extensive outreach marketing and communications support. For LSAT—India, the entrance test to Indian law schools, Pearson VUE has helped grow the number of colleges that accept the test from one law school to over 50 over the past three years, including top schools like the IIT Kharagpur Law School, Amity University Law School-Manesar, Jindal Global Law School-Sonipat and several others.

Elsewhere, UKCAT grew their candidate volume by 25 percent in just two years, in part because of the marketing and communications support, given by Pearson VUE. Over 20,000 candidates take this medical entrance test every year, across 26 universities.

Reduction in administration burden

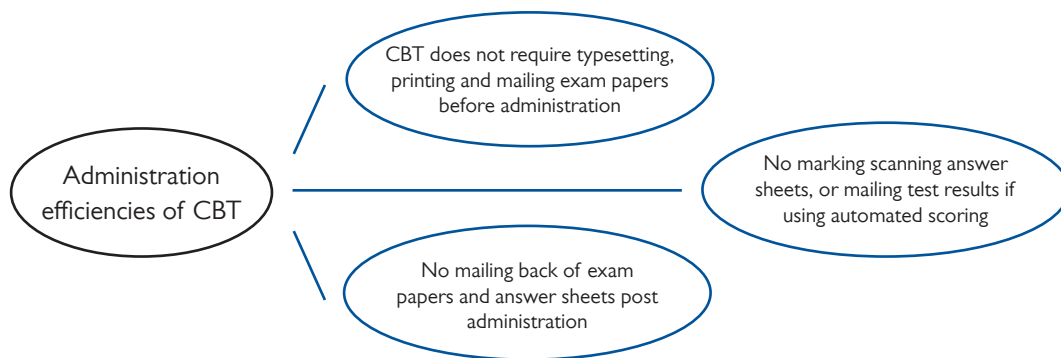
Computer-based testing can remove many of the administrative burdens for institutions of pen & paper tests.

Developing your admissions exam

Pearson VUE's testing services team has more than 200 years combined experience and serves over 100 of our clients with the leading test development tools and talent in the industry. We offer a full or partial service covering test design, content development, test construction and analysis & measurement. We also offer a unique content collaboration platform, Exam Developer, for item authoring. We have supported a range of local, international and global admissions test programmes such as the GMAC, UKCAT, SNU NMAT and LNAT tests.

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Clients can leverage Pearson VUE's secure test-centre network to conduct tests in 180 countries across the globe.



Why Pearson VUE?

- We partner with admissions programmes around the world – we understand your objectives and that no one test is the same
- Our Testing Services team – including measurement scientists – have developed a number of different admissions tests – all share the aim of validity, reliability and fairness
- Our global test centre network gives your candidates wider access, greater convenience whilst improving security – safeguarding your reputation.
- We are part of the Pearson family – the world's largest learning company

References

Lohman, D.F. (2012) An aptitude framework for college admissions testing. Paper presented 3 December 2012 at the first international conference on assessment and evaluation sponsored by the National Center for Assessment in Higher Education, Riyadh, Saudi Arabia.

Tiffin, Paul A, Dowell, Jonathan S, McLachlan, John C (2012) Widening access to UK medical education for under-represented socioeconomic groups: Modelling the impact of the UKCAT in the 2009 cohort, BMJ, published 17th April 2012 2012?

Zwick, R (2006) Higher Education admissions testing. In R.L.Brennan (Ed.) Educational Measurement (pp.647-679). Westport, CT: American Council on Education and Praeger Publishers.

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