



Global Assessment Solutions – Internet Testing without Limits?

Objectives

This poster outlines seven key aspects of an Intelligent Testing System and illustrates the power of technology through Saville Consulting Wave® and Swift examples. Assessment technology and its decision-support applications are also discussed.

Dr. Rainer Kurz, Prof. Peter Saville,
Rab MacIver & Chris Small
(Saville Consulting)

Introduction

The face of occupational assessment is changing rapidly: Computer Based Assessment (CBA) is rapidly becoming the preferred mode of operation in the new Millennium. This explosion heralds a new dawn for testing. There are numerous opportunities and risks that call for new guidelines, policies and ways of thinking. Information Technology affords many opportunities to increase the effectiveness of existing procedures, and allows the development of innovative assessment paradigms. Like with any other shift of paradigm, the current standards may not be appropriate in the new Millennium. Alongside the increased availability and power of CBA there is a fear of misuse and possibly, a drop in standards. This poster aims to highlight how CBA may change operational practices and professional standards in occupational assessment products, training and consultancy.

The poster considers 7 aspects of Intelligent Testing Systems as outlined by Bartram & Bayliss (1984) and decision-support applications in the WW era. The advances will be illustrated through examples related to the international development and roll out of the Saville Consulting Wave® and Swift suite of tools (MacIver et al., 2006).

Test Choice

Validity generalisation and the emergence of sophisticated competency models that link predictor and criterion space facilitate test choice. Figure 1 illustrates the multi-rater nature and content of the Wave Job Profiler covering behaviour, ability and global performance segments. In addition expertise and objectives are covered through Open Format questions.

Instrument Administration

Online assessment vastly increases the reach of psychometric testing but need to be designed robustly to enable self-administration through automated instructions and example feedback. The use of order and content randomisation techniques is advisable as well as the deployment of time windows. The Swift tests divide tests into separately timed 'testlets' that reduce speed-accuracy trade-off issues and enable testlet banking circumventing the strong assumptions of Item Response Theory that are frequently not met in practice. In high-stakes situations the use of supervised follow-up tests is strongly recommended to deter cheating

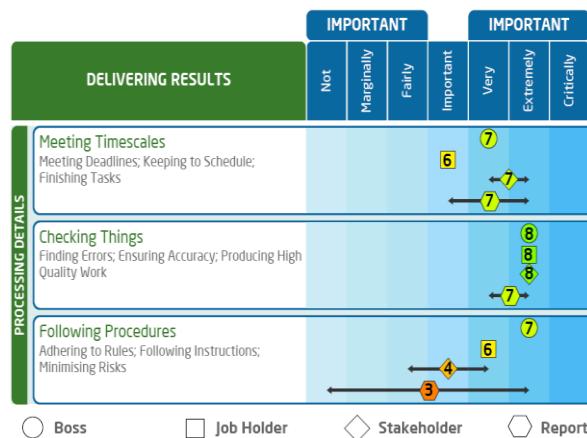


Figure 1: Wave Job Profiler Multi-rater Report Extract of Behaviour Dimension Segment

Scoring

Computer excels at automating scoring. Wave has been configured to routinely score 160 scales while each Swift aptitude test covers 7 standard scores (see Figure 2).

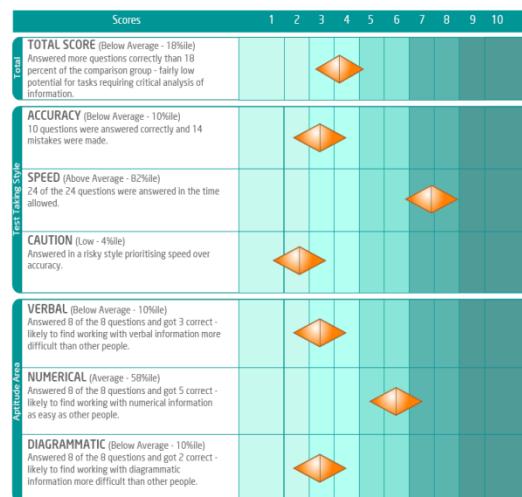


Figure 2: Swift Analysis Aptitude Profile Chart

Analysis

Centralised data storage on a web server enables data harvesting. Wave and Swift standardisation participants were asked to nominate a validation rater. The system automatically invited the rater enabling rapid collection of validation data. Data extraction, norm creation, statistical analysis as well system configuration are vastly improved.

Interpretation

Expert systems are an integral part of the Saville Consulting assessment process. Performance-centric development, hierarchical modelling and the use of validity tuned Competency Potential equations facilitate accurate interpretation of results.

Feedback

All Saville Consulting assessments feature reports that can be given to candidates. In the case of Swift the test user, candidate and line manager all receive the same comprehensive report while for Wave simplified reports are available to meet the needs of the various stakeholders.

Decision-Making

Intelligent Testing Systems can be configured to carry out automated decision-making according to pre-specified rules and algorithms (see Figure 3).



Figure 3: Merit List Dashboard

Alternatively computers can generate decision-support outputs such as Interview Guides (see Figure 4).

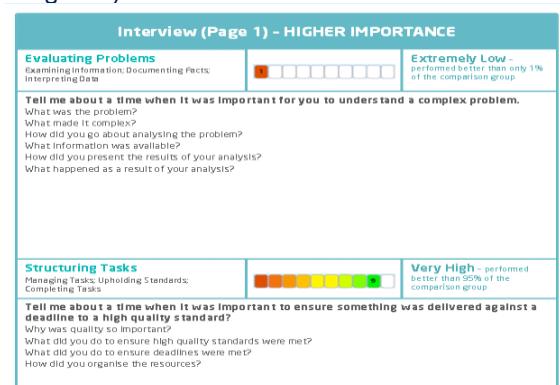


Figure 4: Interview Guide Excerpt

Conclusion

Internet technology provides endless opportunities to improve and deploy assessment practice. The increase in power needs to be matched by wisdom and fine professional judgement.

References

Bartram, D. & Bayliss, R. (1984) Automated Testing: Past, present and future. *Journal of Occupational Psychology*, 57, 221-237.

MacIver, R., Saville, P., Kurz, R., Heneley, S., Mitchener, A., Mariscal, K., Parry, G., Becker, S., Hurst, E., Saville, W., O'Connor, K., Patterson, R., McLellan, S. & Blakesley, M. (2006). The Validation Centric Development of the Professional Styles Questionnaires. Paper at the BPS DoP Conference.