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Welcome to the Autumn issue, which I hope contains a varied and thought-provoking range of articles that will be of benefit in your practice. Education articles focus on dyscalculia, a term often used to refer to problems with numeracy that may be caused by co-occurring difficulties, such as dyslexia, dyspraxia, attention deficit disorder (ADD), attention deficit hyperactivity disorder (ADHD) or low numeracy. Wedderburn, Emerson and Babtie’s articles review aspects of dyscalculia and Ferrier discusses the benefits of free writing.

Organisational articles range from test validation to 360 degree feedback. Watson and Grant discuss the development and validation of a scale to measure work-related competencies, through 13 competency based subscales. McCredie debates what aspects of personality contribute to management performance. The role of personality in relation to job satisfaction and person environment fit is highlighted in Deakin and Coops’ article. Patmore and Maloney present their view of an integrated approach for vocational assessment and coaching. Kilduff reviews overcoming the positivity bias in 360 degree feedback and provides practical tips to assist practitioners.

From the Journals to your Practice discusses the possibility of a ‘whistleblowing’ personality type and invites readers to contribute thoughts and experiences online at the Psychological Testing Centre website (www.psychtesting.org.uk).

Jan Bogg
Senior Editor, on behalf of the Editorial Team
The importance of person–environment fit in job satisfaction: The role of personality

Paul Deakin & Heather Coop

Relationships between person-environment fit and positive organisational outcomes have been demonstrated in many studies. The current study reveals that congruence between current and preferred work environments has a significant impact on organisational outcomes. The study also demonstrates the importance of looking at leadership styles and an individual’s unique personality profile for a more complete picture of person-environment fit.

PERSON-ENVIRONMENT FIT and its importance for employee well-being has received much attention. ‘Person-environment (P–E) fit theory indicates that people are likely to be more satisfied when what a job supplies (e.g. control) is what a person wants or desires, or where a person’s abilities meet the demands of the job’ (Daniels & deJonge, 2010.)

Holland (1973) believed that certain occupations will be inherently more satisfying to particular individuals than others. The occupations that provide the most satisfaction are those that offer the greatest congruence with a person’s preferences, interests, values and abilities. Furnham and Walsh (2001) argue that ‘congruent environments provide job satisfaction because people are among others with similar tastes and values where they can perform tasks that they are able to do and enjoy.’

Relationships between person-environment fit and positive organisational outcomes have been demonstrated in many studies. For example, Swyny and Albrecht (2003) found that perceived person-organisation fit was a significant predictor of job satisfaction, turnover intentions and organisational commitment in contact centre workers. However, research in support of person-environment fit is not unequivocal, with some studies failing to find a link (e.g. Cools et al., 2009), or even an inverse relationship (e.g. Furnham & Walsh, 2001.)

The goals of our study were three-fold:
1. to build on previous research and investigate whether achieving person-environment congruence will have an influence on a range of different work outcomes;
2. to explore links between the ways in which people prefer to be led, and their more general organisational culture preferences; and
3. to investigate associations between specific personality traits and these preferences.

Method
The study used a nationally representative sample (N=738, M=378, F=360) of UK and Irish working age participants, who were in paid employment and had signed up to participate in a large-scale 16PF online validation study.

Participants were asked to complete the 16PF personality questionnaire, alongside additional questions covering the following topics: job satisfaction and work enjoyment;
turnover intentions; perceived stress at work; and leadership preferences. They were asked to rate how comfortable they would feel working in a range of different work environments/cultures, and then to rate the extent that they would describe their current organisation as being reflective of that environment/culture.

Based on the results of these ratings, participants were divided into three groups:
1. those who reported ‘congruence’ between their current and preferred work environments;
2. those who reported ‘moderate congruence’; and
3. those who reported ‘incongruence’.

Results
Chi-Square analyses revealed that participants working in cultures congruent with their preferences reported significantly higher ‘job satisfaction’, and ‘job enjoyment’. They reported being significantly lower on ‘thoughts relating to quitting their job’, ‘likelihood of changing job’, and perceived ‘stress at work’. All of these findings were significant at p<.001.

Chi Square analyses and independent ANOVAs showed a strong association between the way participants like to be led and the type of organisational culture they prefer to work within. In addition, there were differences in participants’ personality profiles that corresponded with these preferences.

Table 1 overleaf shows five different leadership preferences. Participants endorsing each of these were found to prefer different organisational cultures, and were significantly different from the general population on various personality traits.

Discussion
The results of the study support and build on previous research demonstrating that person-environment fit has a significant impact on positive organisational outcomes. The study also revealed a strong association between the way people like to be led and the organisational cultures they prefer, and furthermore showed differences in individuals’ personality profiles that correspond with these leadership and culture preferences.

Specifically, the study looked at five different leader preferences and found that people endorsing each of these preferences had corresponding organisational culture preferences and personality characteristics which showed a logical fit with one another.

Given that person-environment fit in workplaces is so important to a range of organisational outcomes, the study’s findings have important implications for organisations. Organisations should ensure that they fully consider the importance of assessing person-environment fit when selecting people for roles within the organisation. Trait-based personality questionnaires can add value in understanding the complexities of an individual’s personality, and how this influences their work environment and leader preferences.

These findings can help us towards an understanding of how an individual’s organisational culture preferences, leader preferences and personality characteristics all interact with one another, and how they influence person-environment fit which, in turn, has an impact on job satisfaction and enjoyment.
<table>
<thead>
<tr>
<th>Participants endorsing….</th>
<th>Organisational culture preference</th>
<th>Personality characteristics of individuals expressing these preferences</th>
</tr>
</thead>
</table>
| A leader who sets clear direction | More comfortable working in an organisation:  
- With clear structures (**), rules (**), guidelines (**))  
- Where jobs are made as simple as possible (**)) | • Higher rule consciousness (**))  
• A more grounded and practical thinking/decision making style (**))  
• Higher levels of perfectionism (**)) and self control (**))  
• Lower openness to change (**)), being less likely to seek out new ideas/ experiences |
| A leader who allows me to decide most things for myself | More comfortable working in an organisation:  
- Emphasising employee independence (*) | • A more dominant (**)), socially bold (**)) and independent (**)) personality, combined with lower anxiety (**))  
• Higher abstract reasoning abilities (**))  
• A greater likelihood to seek out new experiences and welcome change (**)) |
| A leader who supervises me closely | Less comfortable working in an organisation:  
- Emphasising employee independence (**)) | • Where individuals may have wide-ranging responsibilities (*)  
• Lower abstract reasoning abilities (**))  
• A lower level of emotional stability (*) and independence (*)  
• A lower capacity for self control (**))  
• A more abstract thinking style (**)), and a greater tolerance for disorder ( *), often preferring to leave things to chance rather than planning ahead. |
| A leader who mostly makes decisions in consensus with me and others | More comfortable working in:  
- A structured organisational environment (**)), emphasising independence (**)) and rewarding employee loyalty (**))  
- With people from many different backgrounds (**))  
- Where individuals have responsibility for many different areas (**)). | • A higher level of sensitivity (**)), placing more emphasis on subjective considerations when making decisions  
• A more grounded, practical thinking style (**)), with a greater openness to change (**)) and higher abstract reasoning abilities (**))  
• Higher levels of apprehension (**)) and a greater tendency to be self critical |
| A leader who makes decisions independently and tells me the outcome | Less comfortable working in:  
- A highly structured organisation (**))  
- Where employee independence is emphasised (**))  
- Where employees are viewed as individuals with particular skills (**))  
- With individuals from many different backgrounds (*) | • Lower levels of sensitivity (**)), preferring to make objective, factual decisions, rather than relying on more subjective considerations.  
• Less bound by rules and regulations (**)), perhaps preferring a more expedient and unconventional approach.  
• Lower abstract reasoning abilities (**)) and lower levels of self control (**)). |

Table 1: Five different leadership preferences  
*p<.05, **p<.01, ***p<.001
References

The authors
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Heather Coop is a Consultant at Talent Q.

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What contributes to overall managerial performance? Spencer and Spencer (1993) proposed the ‘Causal Flow Model’ whereby personal characteristics, including aptitudes, underpin the acquisition of competencies which, in turn, contribute to effective performance. Thus:

![Causal Flow Model Diagram]

**Is the Causal Flow Model valid?** If the model is valid for managerial roles, we would expect:

1. Links between specific personal characteristics and specific competencies.
2. Links between competencies and overall managerial performance.
3. No added predictive value for personal characteristics beyond variability in overall performance predicted by competencies.

This article looks at the evidence for each of these expectations.

1. **To what extent do mental abilities and personality traits predict competency ratings?**
   
   In a substantial meta-analysis, Bartram (2005) found significant (uncorrected) one-to-one small effect correlations (mean $r \approx 0.16$) for OPQ Big Five personality traits, motivational variables and a mental ability composite, with ratings for each of the Great Eight competency factors (Kurz & Bartram, 2002). Bartram et al. (2002, pp. 7-8) termed these ability/personality scales ‘Competency potentials’.

   Simultaneously, McCredie (2004, 2010) collected supervisor and colleague competency ratings of 178 business unit directors. He used single competency markers extracted from a published 16 competency framework (Wellin, 1984). Uncorrected correlations were found between the short IQ proxy and three of the Big Five factors from 16PF Form A with four commonly used (e.g. Dulewicz, 1994) cluster headings for managerial competencies. Table 1 reflects an improved clustering of individual competencies from the original.

   Extraversion correlated with ‘[calculated] risk-taking’, the single Adaptability competency in the framework. The remaining Big Five factors, Conscientiousness and Openness, failed to correlate with any competency. Thus the first link in the causal effect chain is empirically supported.

2. **To what extent do competency ratings predict managerial performance?**
   
   That competency ratings could predict managerial performance has never been in doubt

A card sort and constrained distribution of ratings were used to reduce halo and central tendency effects. The mean correlation amongst the 16 scales was moderate ($\rho 0.39$) versus typically small ($r 0.26$) Big Five inter-correlations (Digman, 1997).

Small to large predictive effects were found for ratings of overall managerial effectiveness from all 16 competencies (mean $\rho 0.54$) and large multiple regression effects from each of the four clusters (mean $R 0.61$) and an even larger effect when all 16 competencies were combined ($R 0.82$).

3. Do personal characteristics add value to competency ratings in predicting overall managerial performance?

A number of meta-analyses show that IQ and personality measures directly predict managerial performance (Barrick et al., 2001; Hurtz & Donovan, 2000). McCredie (2005, 2010 Appendix C) found moderate effects for the combined 16PFA FFM resolution plus the IQ proxy ($R 0.34$) and for primary source traits ($R 0.41$).

What is less well known is whether such constructs add value to ratings of competency. McCredie (2005, 2010 Appendix H), using hierarchical regression analysis, discovered that no significant value was added, by either 16PFA primary scales, or its FFM solution, to the variation in overall effectiveness explained by the combination of competency ratings on their own. Thus, the premise of the causal flow model, that competency ratings mediate the relationship between personality characteristics and managerial performance, is supported.

Conclusions

So, are psychometrics redundant in management selection? Hypothetically, this would be the case if selectors had access to competency scores yielding the effect sizes reported above. However, this particular dataset had unique features. Firstly, it was obtained in confidence, for research purposes, from respondents who had extensive in-role knowledge of the subjects. Secondly, although precautions were taken, it is still possible that the correlations were inflated by halo effects (common method variance). What is needed is a rigorous predictive validity study perhaps using the BEI method of assessing competencies.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Best predicted competency cluster</th>
<th>No. of significant correlations in the cluster</th>
<th>Mean uncorrected correlation and effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>IQ proxy</td>
<td>Intellectual</td>
<td>4/4</td>
<td>0.34 Moderate</td>
</tr>
<tr>
<td>Stability</td>
<td>Interpersonal</td>
<td>4/5</td>
<td>0.22 Small</td>
</tr>
<tr>
<td>Agreeableness(-)</td>
<td>Results-orientation</td>
<td>5/6</td>
<td>0.19 Small</td>
</tr>
<tr>
<td>Extraversion</td>
<td>Adaptability</td>
<td>1/1</td>
<td>0.23 Small</td>
</tr>
</tbody>
</table>

Table 1: Ability and personality factors predicting competencies in four commonly used clusters
It is suggested that in normal selection situations, where competency data is less valid, there will still be scope for personality measures to add value. The latter will be valuable where in-role competency data is generally unavailable, as with external recruitment, particularly with those who have no managerial track record, such as recent graduates.

References


The author

Dr Hugh McCredie is a Chartered psychologist, vice-chair of the Psychometrics Forum and author of *Selecting and developing better managers*. 

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Vacancies for Occupational Testing Verifiers

Vacancies are available on the Occupational Testing Verifiers' Group, owing to the completion of Verifiers' terms of office.

The purpose of the Society's standards in test use is to define and maintain standards of assessment use concerning ability/attainment, personality and related attributes. Occupational Testing Verifiers work to verify the assessment methods of Assessors, ensuring that delegates on subsequent training courses meet the required test user competencies.

Applications are invited from Chartered Psychologists who hold the Society's certificates in occupational test use at the levels Test User Occupational: Ability and Personality (formerly Level A and B) and who hold a current entry on the online Register of Qualifications in Test Use. In addition applicants should also be a currently Verified Assessor at the level of Test User Ability or Personality.

Commitment required:

■ Work as part of the Verifiers' group to monitor the standards of assessment carried out by Assessors, across the UK (approximately 10 days per annum).
■ Attend Verifiers' group meetings (four meetings per annum).
■ Maintain and develop knowledge relevant to the content and conduct of the Society's qualifications in psychological testing.
■ Act as a representative of the Society when undertaking verification and quality assurance duties.

The person appointed will:

■ be involved in training and assessment in occupational test use;
■ have a sound understanding of current issues in testing;
■ have good interpersonal skills to facilitate positive and constructive relationships with colleagues, Assessors and test users; and
■ be willing to undertake professional development such as working towards Specialist in Test Use verification.

Appointments are for one year initially. A full Verifier's term is for four years.

Verifiers will be financially compensated at rates determined by the Society. (Rates are available on request).

Please contact Mala Pancholi at the Psychological Testing Centre 0116 252 9536 or email mala.pancholi@bps.org.uk for a Statement of Interest Form and Role Profile.

Informal enquiries can be forwarded on to the Senior Verifiers, Angus McDonald and Nigel Evans.
360 Feedback: Overcoming the positivity bias

Aoife Kilduff

Clients often ask us to help them introduce more ‘edge’ into their 360s. They are frustrated that 360 feedback ratings invariably err toward the positive. This can lead to bland 360 reports that are difficult to interpret and that potentially add little value to an employee’s clarity about what to improve on. Our own recent analysis (internal research, unpublished) found that simple steps, such as changing the rating scale, can make a meaningful difference. Our main findings and a number of practical tips are outlined below.

Ratings as observation, evaluation or opinion
Through the course of our work with clients, we have run over 170 different 360 surveys with many different types of items. We decided to analyse the most frequently used to see which worked best in overcoming positive bias (internal research, unpublished). Three types of item stood out as the most popular:

1. Observation or frequency ratings – how often does this person do something, e.g. Never to Always.
2. Evaluation or developmental ratings – how skilled is this person in doing something, e.g. Significant Development Need – Significant Strength.
3. Opinion or agreement ratings – to what extent does the rater agree with a description of this person doing something, e.g. Strongly Disagree – Strongly Agree.

In our experience, frequency scales are the most commonly used. They are often favoured by clients as they encourage respondents to rate based on what they have actually seen. Four and six point scales display a relatively low bias for ratings on the positive end of this type of scale. However, approximately 95 per cent of ratings on a five-point scale err towards the positive.

Development scales are also popular, especially when clients want clear-cut information on strengths and development needs. Here, a five-point scale produces the widest distribution of ratings with only 59 per cent being ‘Strength’ or above. Ratings on the six-point scale are slightly less spread out. The four-point scales appear to be the least effective, with 90 per cent of ratings being on the positive end of the scale.

Clients often opt for agreement scales as these are easy to understand and allow for more creative descriptions of behaviour, attitude, etc. However, in our experience they display the greatest bias for positive responses. On four- and six-point scales, 95 per cent of respondents chose ‘Agree’ or ‘Strongly Agree’. The five-point scales appear slightly less skewed with 13 per cent selecting ‘neither agree nor disagree’.

We explored these findings further, using classic cognitive psychology as our guide, and present our conclusions below:

1. **People will agree with just about anything**: Agreement scales are widely used. However, our research highlighted a clear psychological hazard when using them – a ‘positive response bias’. In five- and six-point scales, over half the respondents chose ‘Agree’.
In four-point scales, half opted for ‘Strongly Agree’. This is in line with a 2005 review (Saris et al., 2005) of over 100 studies that concluded ‘respondents are inclined to agree with just about any assertion, regardless of its content’.

2. **Neutral feedback is a valuable anchor:** Scales with an even number of ratings force respondents to make a choice. This may seem like a good idea as it prevents respondents from ‘sitting on the fence’. But in 360 feedback, people rarely have strong opinions on all aspects of an individual’s behaviour. Forcing the respondent to make a positive or negative rating creates a false dichotomy. When forced to make a choice, respondents usually prefer to be optimistic and give positive ratings, thus leading to a positive tendency overall across the feedback.

   This can be easily avoided when rating scales have a natural neutral mid-point (e.g. ‘neither agree nor disagree’). This acts as a psychological anchor between positive and constructive ratings. It must be noted that neutral feedback is qualitatively different from a ‘can’t say’ response. The former expresses an absence of opinion, while the latter an absence of opportunity for observation.

3. **Bringing order has its problems:** A common route to avoiding inflated ratings is to force respondents to choose strengths and development needs from a list and rank them in order of importance or frequency. This creates a clear set of relativities. It can also reduce the time taken to complete the survey (Feltham et al., 2011). However, it creates other issues in terms of interpretation and relevance of the feedback. It doesn’t help with comparisons, e.g. over time or with other people. Also in our experience, recipients struggle with converting rank ordered areas into clear development actions. The list of behaviours or competencies presented for ranking needs to be of a manageable size, otherwise respondents express a preference for the items appearing early in the list. This can also limit the utility of the feedback exercise.

4. **Clarifying for consistency:** Rating scales that invite personal interpretation (e.g. those with descriptive labels only at each end of the scale) are often believed to provoke more thought and thus a more astute evaluation of performance. This is because verbal labels are seen to be ambiguous (Krosnik & Fabrigar, 1997). However, we found the opposite was true. Having descriptive labels only at each end of the scale increased the bias for positive ratings. Choosing a rating scale with verbal descriptions at each point appears to prompt actual perceptions of behaviour (Krosnik & Fabrigar, 1997). Also, numbers have no inherent meaning, so including verbal labels at each point helps respondents latch onto nuances of difference and makes completing the survey easier and quicker.

**Tips for overcoming the ‘positive response bias’ in your 360s**

Given the findings outlined above, we suggest the following guidelines when choosing a rating scale:

- **Avoid agreement scales** – Using frequency or development scales may mean slightly altering the survey items but this extra thought upfront will pay off when respondents receive more balanced feedback.

- **Use rating scales with a mid-point** – The five-point development scale is the best to use. In our experience it is the least skewed with only 57 per cent of responses sitting at the positive end of the scale and a more even spread of ratings across the full spectrum.

- **Label all ratings** – Fully labelled scales display less of a bias for positive ratings and also ensure that respondents understand the meaning of each point on the scale. People prefer using rating scales with verbal descriptors.

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■ **Mix and match** – Include some rank ordering items along with more traditional scaled quantitative items and open-ended qualitative questions to get the richest form of feedback.

**References**


**The author**

Aoife Kilduff is a Client Manager at YSC Online.
KEY COMPETENCIES can help provide insights into a person’s employability level. The current study aimed to develop a new scale based on skills and competencies to address the need for a psychometrically robust measure of employability. Gorsline (1996) defines competencies as a set of particular ‘skills, knowledge, attitudes and experiences’. Competencies possessed by an individual within the workplace are directly related with their job performance, capabilities and ability to deal with demands (Bartram, 2005). Existing measures of employability often focus on job specific skills or rely on employers to rate their employees, providing an opening for a comprehensive competency-based measure to improve self awareness both for those seeking employment and employers. The current study aimed to achieve a practical measure that provides competency-specific feedback through 13 competency based subscales. This knowledge allows individuals to identify specific areas to develop and for employers to place employees within appropriate roles. During a period of austerity this information can prove invaluable to candidates and recruiters.

According to the Office for National Statistics (2012) those particularly affected by unemployment are the young, with youth unemployment reaching a new record high, leaving over 22 per cent of 16–24-year-olds without a job (Martin, 2012). Furthermore, graduate recruiters receive an average of 69 applications for each job, leading most recruiters to introduce the higher 2.1 degree minimum within their selection criterion (AGR, 2010). This lack of opportunity has led to a highly competitive labour market in which individuals must possess and demonstrate key skills and competencies if they wish to be noticed.

There has been a serious skills shortage in the United Kingdom for decades, despite policies designed to facilitate improvement (Harrison, 2002). Policies to improve the UK’s skills and competencies through education appear successful due to the inference of ‘skill’ carried with the terms ‘qualification’ and ‘degree’. However, recent employer opinion suggests that this view is inconsistent with the current labour market outlook. Employers are now placing more value on acquiring skills and competencies than pure education (HECSU, 2012). The current skills and competency shortages have been attributed to education. Government policy placing pressure on academic improvement has led to the implementation of educational models that focus on content at the expense of competencies development (Albrecht & Sack, 2000). Schooling of this type has inadvertently undermined the original goal to improve the nation’s skills and competencies base by forcing focus on results rather than demands of the market (Paton, 2010).

As a first step towards educational intervention, identification of which competencies are most desirable is essential when developing a comprehensive measure of
employability. The lack of clarity regarding these ‘competencies’ makes the task of measuring them difficult (Hodges & Burchell, 2003). The current study employed an existing framework of competencies that would relate to numerous sectors of work.

**Research Objectives**

1. To develop and validate a measure of employability through the identification of key competencies possessed by an individual.
2. To ascertain if a university environment facilitates the development of these key competencies.

**Method**

**Participants**

Forty students were recruited from a UK university undergraduate programme (20 from level 1 and 20 from level 3, combined mean age 18–20). Twenty additional participants (mean age 47) were recruited from a UK organisation to compare students to those currently employed. Overall 65 per cent were female and 35 per cent male.

**Materials**

The scale was developed from competencies previously identified through Manifest Content Analysis of seven organisational psychology job descriptions (Gee & Steptoe-Warren, 2011). These competencies were consequently incorporated in the development and validation of a General Employability Competency Scale. Definitions for each of the 13 competencies were developed to ensure items reflected their respective competency.

Four questions were devised; two positively worded and two negatively worded to measure each of the 13 key competencies. Each question required participants to indicate on a seven-point Likert scale the extent to which they agreed or disagreed with each statement to attain a maximum score out of 28 for each competency. Seven further questions were added as a lie detector.

A pilot study was carried out on five third-year students, which established the scales suitability for implementation prior to distribution. Two experts also reviewed the scale prior to the study, items were adjusted as appropriate.

**Results**

Descriptive statistics in Table 1 highlight a progressive score increase when related to time spent studying and in the workplace. Results of a Kruskal-Wallis test indicate this difference in employability scores to be significant between each group, \[ \chi^2 (2, N=60) = 14.78, p < .01 \] with a mean rank of 18.93 for first year students, 32.80 for third year students and 39.78 for those in work.

<table>
<thead>
<tr>
<th>Sample</th>
<th>N</th>
<th>Mean</th>
<th>Std. Error of Mean</th>
<th>Median</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>First year students</td>
<td>20</td>
<td>209.50</td>
<td>6.846</td>
<td>211.00</td>
<td>30.62</td>
</tr>
<tr>
<td>Third year students</td>
<td>20</td>
<td>235.70</td>
<td>4.711</td>
<td>235.00</td>
<td>21.07</td>
</tr>
<tr>
<td>Workforce</td>
<td>20</td>
<td>251.90</td>
<td>6.846</td>
<td>245.50</td>
<td>30.68</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>232.37</td>
<td>4.200</td>
<td>31.00</td>
<td>35.53</td>
</tr>
</tbody>
</table>

Table 1: Descriptive statistics for total scores of each group.
Significant differences were found between age categories with each ascending age band achieving a higher mean rank and gender differences were evidenced by males (Md =259, N = 21) scoring significantly higher than females (Md =223, N = 39). Total scores were additionally found to positively correlate with self-perceived employability and total number of jobs.

Internal reliability of the whole scale was established through Cronbach’s Alpha (α = .908). Test-retest was used on 10 per cent of the sample to test external consistency; significant correlations after two weeks indicated a high level of temporal stability (p<.001). Face and content validity of scale items was also tested with each scale item being rated as sufficiently ‘essential’ by observers. The sub scales for each competency will need to be confirmed through factor analysis.

**Discussion**
The progressive increase in employability scores in the expected direction of increasing with time spent studying and in the workplace suggests key competencies develop within university and the workplace facilitates expansion of the competencies. The low first-year scores support literature suggesting schools are failing to provide students with key competencies; leaving the task to universities (Paton, 2010). Analysis of different age groups suggest competencies are gained through life experience, in this study scores significantly increased with age even within the workplace sample, gender differences were also apparent.

This study has indicated support for a measure of employability. The scale has been tested for internal and external consistency and shown to be consistent in this sample. The expected correlation between employability scores with self-perceived employability and total jobs gives additional credibility to the scale. Further validity and reliability checks, including factor analysis are required to finalise the scale.

The primary focus of the scale’s implementation should be on the youth population or those in early employment. The scale’s distribution within an educational environment could aid identification of specific competencies young people need to develop to improve their chances of being employed. This could aid direction to educational policy and initiatives. The incorporation of a competency framework has given structure to the scale; enabling constructive feedback from results to aid students and employees to develop.

**Conclusion**
In an economy that continues to offer significantly limited recruitment opportunities the ability to identify and improve key competencies will aid a person’s ‘transferability’ in the domestic and global marketplace. This identification of deficient competencies is an essential first step towards making informed decisions concerning intervention and long-term economic benefits should follow.

**References**


The authors

**Christopher Watson** is a student at Coventry University and **Dr Christine Grant** is a Chartered Occupational Psychologist and Senior Lecturer at Coventry University.

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So what and then what? An integrated approach of vocational assessment and coaching

Sharon Patmore & Shaun Maloney

This article sets out why vocational assessment, although useful as a standalone process, increases its usefulness when it forms part of an integrated process with coaching, thereby assisting individuals to recognise and successfully move towards new types of work or careers.

In applying this integrated approach, Royal British Legion Industries (RBLI) have developed LifeWorks+, a unique method of bringing together the elements of assessment and coaching for the benefit of Armed Forces veterans who find themselves in need of career changes. This article shares some of the insights gained through our experiences.

Background

Before considering the merits of an integrated approach of assessment and coaching, clarification and definition of key terms is a useful starting point. The key terms within this article are vocational assessment (VA) and coaching. Clarification of terms, specifically VA, is important as there are a range of other terms used extensively and interchangeably in similar contexts but having subtle differences in their meaning, e.g. career assessment¹, employment assessment² and vocational rehabilitation assessment³.

For the purpose of this article, VA is defined as a ‘global appraisal of an individual’s work/training background, general functional capacities and social/behavioural characteristics’ (Wesolek & McFarlane, 1992). The assessment provides information against each of these key categories, building a comprehensive picture of needs.

The second integral part of LifeWorks+ is coaching, here defined as ‘a process that enables learning and development to occur and thus performance to improve’ (Parsloe, 1999).

The aim of VA

Understanding how these two component parts work provides insight to how they can be combined to benefit the individual. It is important to recognise that the key aim of vocational assessment is to assess a person’s fit to a vocational goal, across a number of dimensions, in order to provide a comprehensive understanding of what might be appropriate work options. This requires assessment across a range of categories (as highlighted above) that can be completed using a number of formal and informal assessment methods. For the more formal objective assessments there are numerous

¹ In this case tests and assessments are taken to measure preferences in jobs and career types based on the individual’s assessment of his or her own personality and character traits.
² Defined as ‘assisting unemployed jobseekers to make an informed decision about an appropriate and specific job’. Meehan, Birkin and Snodgrass (1998)
³ This identifies what the client can and cannot do safely as well as any other barriers to return to work which may or may not be disability or condition-related (Nowland, 2005).
assessments available on the market, ranging from paper and pencil to electronic versions via web-based platforms.

Recognising that each test is designed for measuring specific elements, the role of the assessor is, therefore, to select the right assessment tool for each situation, dependant on the defined purpose of ‘vocational assessment’ in each context. In many cases, VA processes only comprise measures of a person’s interests, but the danger in this lies in the possibility of reinforcing unrealistic expectations in those cases where the test-taker is not likely to be able to complete the identified work options. In an attempt to better manage these expectations, it is often beneficial to combine the results of this interest assessment with information regarding the learning potential and level of ability of the test-taker.

The LifeWorks+ methodology

This ‘whole person’ approach to measuring a person’s capability towards new and different vocational aspirations is the method adopted in LifeWorks+ assessment. This requires the selection of a range of relevant assessments that facilitate the test-takers development of a comprehensive understanding of their strengths and their limitations. By taking this combined approach to assessment, the purpose of the tests in LifeWorks+ is the identification of interests, abilities and capabilities of the test-taker, then, use these to evaluate the appropriateness of identified specific vocational goals.

Within this integrated process, the overall aim of coaching is to employ versatile strategies to improve the individual’s life by furthering his or her goals or, perhaps more importantly, enabling them to move past existing fears and barriers. Versatility, in this case, means employing numerous aspects of coaching, including: helping clients to realise and define their goals, needs, motivations and desires; subsequently assisting them with developing appropriate strategies to achieve their goals; and motivating them to implement these strategies to experience profound and lasting change. By being this versatile it means that the LifeWorks+ coaching element is a unique process, empowering the individual to develop his or her own solutions to problems.

An important aspect of the coaching element focuses on assisting individuals to realise and redefine self-beliefs; the coach assists firstly with identifying limiting beliefs and then with developing the courage and self-confidence to set and reach realistic goals. It supports an increased effectiveness towards personal growth as the client ‘owns and is accountable for’ the solution, rather than simply being told what to do (de Shazer, 1988). It is then the individual that becomes the creator of his or her own new life and goes on to develop the skills, confidence and overall self-efficacy necessary to change and ultimately succeed.

The need for the test-taker to understand the meaning of any and all results is important in the delivery of any assessment process, including VA. Of course, this should go without saying as all professionals delivering assessment processes ought to provide meaningful feedback as a matter of course. However, equally important in VA is the provision of opportunities for the test-taker to gain an understanding of what and how they are able to apply the information from their results to enhance their work options and prospects. Unfortunately, there continues to be practices where vocational assessments are completed in isolation of any additional provision of assistance to support individuals maximise their potential. In overcoming this dilemma, LifeWorks+ combines assessment with coaching as an integral thread throughout (see Figure1).

The coaching process, informed by current coaching practices and models such as GROW (Whitmore, 2002) and CLEAR (Hawkins & Smith, 2007), provides specific and
frequent periods where clients are encouraged to reflect and examine themselves in a safe and trusting environment. Figure 1 depicts the integration of the two components of assessment and coaching as they occur in LifeWorks+.

Experience has shown us that many Armed Forces veterans come to VA with long-held beliefs about themselves, the world around them and their ‘destiny’ in life, which often limits their ability to set and achieve manageable goals. Adopting an integrated approach helps to dispel many negatively held beliefs by providing objective evidence of abilities, identifying where these abilities can be focussed and then by equipping them with the tools to achieve their goals. Utilising either vocational assessment or coaching processes in isolation, in our experience, has less impact on achieving and sustaining work related goals.

**Conclusion**

Assessment to better understand types of vocational goals appropriate for each person is a useful process, but its usefulness is diminished when levels of ability are not taken into account; this increases the likelihood of individuals developing unrealistic expectations. A comprehensive assessment process measuring a range of interest, abilities and capabilities will provide a wealth of understanding better informing on vocational goals. Accepting that this in itself is useful, it becomes even more so when combined with coaching processes that inform on what and how to use the assessment results to achieve the desired vocational goal. It is this integrated approach, used throughout the LifeWorks+ programme, that provides a combined positive effect of increasing a person’s understanding of their ability to achieve specific vocational goals with elements of coaching to support in realising their potential to achieve these goals.

**References**


MARCIA MICELI and colleagues from four US universities have published their research in *Human Relations* (August 2012 edition) on organisational wrongdoing. The research provides recommendations to managers and policymakers interested in reducing the incidence of organisational wrongdoing. This has a certain resonance, in these times of ongoing revelations regarding organisational wrongdoing in many sectors. Miceli et al. developed and distributed questionnaires to the entire population of military and civilian employees of a large US military base (N=9906). A third of staff participated (N=3288), this is a similar response rate to other whistle-blowing studies involving non-student populations.

Miceli et al. discuss the fact that research consistently shows that most employees who believe they have observed wrongdoing in their organisations do not report it. The researchers therefore posed two key research questions: Is the observation of wrongdoing associated with negative consequences for employees and ultimately, the organisation? What factors predict whistle-blowing?

The researchers used the POB (prosocial organisational behavior) model of whistle-blowing that Miceli and colleagues developed in prior research. The POB model proposes that observers make three key decisions that can lead to whistle-blowing:

1. Is it my responsibility to act?
2. Is there any action available that I believe could stop the wrongdoing?
3. Do the expected benefits relative to costs outweigh those of doing nothing or alternative actions?

The POB model suggests a mediating process. The more the individual believes whistle-blowing is a viable option, will be successful and not result in negative career or personal consequences, the more motivated the individual is to act.

The findings of Miceli and colleagues suggest that predictors of whistle-blowing included having a proactive personality and gender, with women slightly more likely to whistle-blow. Consistent with the POB model, organisational wrongdoing was generally
associated with individuals reporting lower perceived organisational support and lower perceived procedural and distributive justice in reporting channels. Furthermore, when organisations were viewed by individuals as being aware of and tolerating wrongdoing, this was linked to negative outcomes for both the individual and the organisation. However, being seen to correct the wrongdoing was linked to positive outcomes and appeared to be almost as important as preventing wrongdoing occurring in the first place. A key message here is that the organisation should be proactive when wrongdoing is uncovered to engage employees.

Interestingly, this is one of the few studies to provide tentative evidence that a ‘whistle-blowing personality’ may indeed exist, although as the authors suggest more research is needed.

**Have your say!**

What are your views/experience on the possibility of a ‘whistle-blowing personality’? Go to the PTC website (http://www.psychtesting.org.uk) and click on the link to the article from the homepage and add your comments.

Read the paper online (abstract only or full article with subscription)  
http://hum.sagepub.com/content/65/8/923.

**Reference**

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Maths difficulties, dyscalculia and modern life
Sarah Wedderburn

This article will examine the effect of modern life on learning numeracy, the difference between maths difficulties and dyscalculia and the main principles of maths remediation.

GOVERNMENT figures show that almost half the working population of England has only primary school maths skills and, while the percentage of adults with literacy skills equivalent to a Grade C or above at GCSE has risen from 44 per cent to 57 per cent since 2003, the percentage of adults with maths skills strong enough to achieve a C Grade GCSE has fallen from 26 per cent to 22 per cent since 2003 (DBIS, 2011). Parsons and Bynner (2005) found that numeracy problems can have a very strong negative impact on job prospects throughout an adult’s life, which emphasises the importance of acquiring adequate maths skills and the magnitude of the problem.

Changes to modern living that affect children’s learning
In many families nowadays both parents work and this will alter the dynamics of home/family life and consequently impact on child development. An example of an environmental factor that affects both cognitive and behavioural development is eating meals at a table, which involves similar basic skills to those required for learning in school, such as sitting still for prolonged periods, taking turns, developing self-control, listening to others, retaining an idea, speaking, developing an idea verbally and arguing a case. Life in the 21st century has shown a trend towards eating meals in front of the television, but this does nothing to help develop any of these skills which are so crucial to learning. A relatively small change in children’s lives, such as a more relaxed attitude to eating meals, would appear to have a real effect on learning.

Changes to modern living that affect the learning of maths
How does this change away from eating meals at a table affect the preparation of children for school numeracy? If there are five people for tea, laying the table involves counting out five knives, five forks and five spoons. Placing the cutlery on the table by putting the spoon next to the knife involves placing them in a sequence. These are all activities that help build an understanding of numbers.

The basic foundations of an understanding of number consist of:

■ Copying patterns.
■ Sorting objects.
■ Language of number.
■ Sequence of numbers.
■ Object counting.
■ Number patterns/subitising.
■ Development of numerosity.
■ Conservation of number.

These are the basic skills that we need to develop at home so that children have
numbers as a life skill on which to base their learning when they start school. Modern life does not help with other aspects of maths. Children no longer do activities that they might previously have done, such as hanging out the laundry and then pairing the socks, which brings the language of ‘pair’ into real life. Another example would be home cooking. For instance, making ten cherry buns requires ten cherries, counting out each one and then putting them individually on the ten buns. This is learning through doing, physical manipulation and the concurrent visual input – the multi-sensory learning that enables pupils with all learning styles to be able to comprehend and retain knowledge.

Learning begins in a concrete mode
The physical touching and moving of objects is the level at which learning begins. This feeling, seeing and moving is essential for the development of full understanding in young children who are not language dominant. Computers are a useful tool for revisiting and over-learning but they work in a representational mode. For learning, we need to be prepared to come down a level to the concrete – whatever the actual age of the learner.

Activities have to be revisited many times for them to become established patterns of understanding. Many pupils need continual revisiting and this is difficult to fit into the Primary Framework. This comes back to table laying, which is an activity that will take place every day of every week.

Maths difficulties and dyscalculia
The general understanding is that 6 per cent of the school population have difficulty with maths. There is, however, a difference between pupils who have a specific learning difficulty with maths, or dyscalculia, and pupils who have failed to gain strong enough mathematical foundations to enable them to understand more difficult concepts such as decimals and percentages. The Department for Education and Science (2001) defines dyscalculia as ‘...a condition that affects the ability to acquire arithmetical skills. Dyscalculic learners may have difficulty understanding simple number concepts, lack an intuitive grasp of numbers, and have problems learning number facts and procedures. Even if they produce a correct answer or use a correct method, they may do so mechanically and without confidence’ (p.2).

Pupils who are struggling because they have failed to gain a strong understanding of numerical foundations are reasonably easy to teach by going back and filling in their knowledge gaps, starting from a concrete mode. It is harder to help dyscalculic pupils who have failed to gain any intuitive grasp of numbers. These pupils have no basic understanding, and often with a combination of other SpLDs they find the retention of number facts and procedures very difficult, and their correct application even more complicated. It is extremely hard to retain knowledge that one does not understand. For these pupils, it is even more important to be prepared to go back to the beginning with concrete resources so as to give them a chance to really understand what numbers are all about.

Principles of maths remediation,
Dyscalculia and maths difficulties may be considerably helped if remediation follows these basic principles:
■ Understand a pupil’s learning style – multi-sensory teaching.
■ Introduce all concepts in a concrete mode.
■ Continually revisit and overlearn.
Reinforce a knowledge of the language of maths.

A further problem for the learning of mathematics is the cumulative characteristics of maths. All learning is based on what went before, unlike, for example, history where one can gain a good understanding of the Victorians without knowing anything about the ancient Greeks. A pupil will not be able to understand decimals if they have failed to gain a real understanding of place value at an earlier stage. This theory underpins some further principles of remediation:

- Necessary that mathematical foundations are secure.
- Organise lessons so that they follow a cumulative development programme.

### Development of numerosity

Number patterns are extremely beneficial to children with poor number sense as they prevent a ‘one after another’ view of numbers; each number pattern has a distinctive identity and they develop a view of numbers as internally patterned constructs (wholes which can be built up, broken down and built up again).

Through number patterns the children are learning about the relative size of numbers and their relationships to other numbers. These number patterns can be introduced and reinforced in a concrete mode using anything that can be set or piled. Coloured glass nuggets are popular as they are very tactile. To help the children remember number patterns, they can play a game where they catch a giant dice and then have to give a whole-body reaction to that number. For example:

1 – pat your head.
2 – clap your hands twice.
3 – right arm up, left arm up, right arm up.
4 – march four steps.
5 – touch your nose 5 times.
6 – swing your arms 6 times.

However, any variation will work.

Butterworth (1999) has shown that dyscalculic pupils are very weak at subitising – seeing a random set of dots and being able to estimate how many are there. Working with number patterns builds up this skill.

### Maths anxiety

Failure is a very negative place that makes learning extremely difficult. Research by Chinn (2004) on maths anxiety shows how this can impede learning. To combat this we have to ensure that our pupils enjoy their lessons and that their self-confidence in using numbers is restored. The full set of maths remediation principles has this as its last, but overwhelming, principle:

- Understand a pupil’s learning style – multi-sensory teaching
- Necessary that mathematical foundations are secure
- Introduce all concepts in a concrete mode
- Continually revisit and overlearn
- Organise lessons so that they follow a cumulative development programme
- Reinforce a knowledge of the language of maths
- Need to make lessons enjoyable and amusing to aid retention

### References

Assessing for dyscalculia: what to investigate

Jane Emerson & Patricia Babtie

Dyscalculia
Numerate people understand that a number represents a set, that numbers can be compared and how they can be used to do calculations. Dyscalculics lack this basic sense of number. Research suggests that it may be caused by a developmental brain difference (Dehaene, 1997; Butterworth, 1999). It can also be acquired as a result of trauma. The term dyscalculia is often used as an umbrella term to refer to problems with numeracy that may be caused by co-occurring difficulties, such as dyslexia, dyspraxia, ADD, ADHD or low numeracy.

Dyscalculics can develop number sense and learn to become numerate through the use of structured multi-sensory interventions which teach pupils to reason about numbers so that they can use them to solve problems. Intervention needs to start at the point at which the pupil is secure and build on that foundation. Assessment involves finding out not only what the pupils can and cannot do but also how they think about numbers. Language plays a critical role in developing and understanding numerical concepts. Listening to how pupils explain what they are doing provides essential diagnostic information from which to design a teaching programme.

Key indicators of dyscalculia
Dyscalculia manifests as problems with:
- Subitising – the ability to enumerate a small number of objects without counting.
- Estimating – giving a reasonably accurate estimate of a quantity of objects.
- Counting in ones forwards and backwards from different whole numbers.
- Simple comparisons of numbers.
- Simple number sequences.
Simple calculations – each calculation is seen as an instruction to count and fingers are frequently used well beyond the point that would be expected.

Assessing number sense

The Dyscalculia Assessment (Emerson & Babtie, 2010) starts at the most basic level of numeracy – counting individual objects – then checks early calculation, key number facts and knowledge of place value, before looking at strategies for addition, subtraction, multiplication and division. If a pupil has failed to grasp simple counting and calculating skills, it is not necessary to continue the assessment. Teaching needs to start at the point at which knowledge and understanding have failed to develop.

Counting

Counting underpins basic numeracy. Dyscalculics may have difficulty remembering the order of numbers and may think of numbers as a random string of sounds or as varying ‘clumps’ of ones (Yeo, 2003). Counting involves knowing the number names and accurately synchronising counting words and objects in a set. Dyscalculics frequently miscount by failing to coordinate words and objects.

Subitising is an innate skill. It is the ability to enumerate a small quantity without having to count them. Scatter a few counters (not more than five) and ask the pupil to say how many there are. A numerate person will instantly be able to. A pupil who cannot do this, and has to count them, is highly likely to be dyscalculic.

A second essential skill is estimation. This is the ability to guess roughly how many items there are in a group of items without counting. Start with a group of about 10 counters. If the pupil is successful, check the estimation of 20 or more objects. If a pupil makes wildly inaccurate estimates then this suggests a poor sense of number, indicating dyscalculic tendencies.

Oral counting forwards and backwards

Asking a pupil to count in ones is a quick way of uncovering numerical difficulties. Pupils should count forward in ones accurately and fluently without undue hesitation, starting from any number. Ask the pupil to start counting from 1. If they are able to count to about 22, stop them and ask them to count on from a larger number, such as 47. If they reach the mid-60s successfully, stop and ask them to count backwards. Counting backwards is also very important diagnostically as dyscalculics frequently have great difficulty doing this. Initially they should count back from 24, then test their ability to start from a larger number such as 84.

Some common counting errors are:

- Language errors, as in ‘threeteen, fourteen, fiveteen’.
- Omission of numbers at the decade boundaries, such as ‘48, 49, 51, 52’.
- Inability to change to the next (or previous) decade, such as ‘84, 83, 82, 89, 88, 87’.

Further investigation of counting may uncover problems with counting in 10s, 5s and 2s. Dyslexics, as well as dyscalculics, may show evidence of poor sequential sense of the structure of the decades. Many children with low numeracy have learnt to count in tens by rote to 100, but those with dyscalculic tendencies show evidence of lack of understanding of the number system above 100. They may make errors crossing the 100 boundary to 110, typically starting to count in hundreds (90, 100, 200, 300, etc.). A common error caused by auditory confusion is ‘70, 80, 90, 20’ because they have not
distinguished the ‘teen’ and the ‘ty’ suffixes. If a pupil counts slowly in twos, this may be because they are counting in ones, saying every odd number under their breath, showing lack of automaticity.

**Early calculation**

The pupil’s facility with adding or subtracting one, or two, from a number marks the earliest stage in calculation. They should give a fluent rapid answer to the question ‘What is one more than 12?’

If they answer ‘fourteen’, consider the nature of the error. It may be because the pupil does not know the counting sequence. However, it may be that the pupil is unsure where to start counting on from – some pupils think that they should start with the next number and then add one.

When adding a few more to a quantity, the dyscalculic may have to count all the objects. To assess this, ask the pupil to count up to ten objects into a line. Then give them four more and ask them to leave a small space and continue the line. Next ask, ‘How many counters are there altogether?’ If they have to go back to the beginning and count all the counters, this suggests that they may be dyscalculic. ‘Counting all’ is an early developmental stage in learning to count. However, dyscalculics may not progress beyond this. They remain caught in the ‘counting trap’ and see every calculation as an instruction to count – however large the number.

Competent calculation involves pattern awareness. Ask pupils to use counters to make the conventional dice patterns. If they cannot do so, and if they put the counters out in lines, it may indicate poor visual memory or poor spatial ability. If they are familiar with the usual dice patterns, briefly investigate whether they can invent new patterns for 8 and 10, using the familiar dice patterns. These patterns are important for developing number sense.

The ability to derive a new fact from a known fact is an important indicator of mathematical reasoning. Can pupils derive near doubles facts from doubles facts? For example, if they know that 2+2=4, can they work out what 2+3 is and explain why the answer must be one more than 2+2? If the pupil treats each problem as a completely separate one and has no strategy to solve it other than counting in ones, then this is a strong indicator of dyscalculic tendencies.

**Bonds of 10 and place value**

The bonds of ten are the most important number facts. Can the pupil give the bonds of 10 orally, and then in written form? Automatic recognition of bonds of 10 is essential for effective calculation by bridging, one of the most useful strategies. Based on linear understanding of the number system, it enables 10 (or a multiple of ten) to be used as a stepping stone to the next decade.

Adding a single digit number to 10, without counting on, is the next step in assessment, before moving on to investigate knowledge of place value, starting with partitioning. This is the use of place value knowledge to separate numbers into hundreds, tens and units to solve addition and subtraction problems. For example, \(35 + 62 = 30 + 5 + 60 + 2 = 90 + 7 = 97\).
Conclusion
Careful investigation of the way in which a pupil counts, both reciting the sequence of numbers and counting objects, and how they manage and reason about simple calculations, is often sufficient to establish where the dyscalculic’s difficulties lie. Remediation should start at this point to establish a secure sense of number. A thorough assessment of basic numeracy would then include investigating understanding of the concepts of multiplication and division, as well as use of standard written forms and the interpretation of simple word problems.

References

The authors
Jane Emerson is Director of Emerson House, a London centre for dyslexia, dyscalculia and dyspraxia. Trained as a speech and language therapist, she has more than 25 years experience of working with primary age children with literacy and numeracy difficulties. Patricia Babtie has taught children and adults with maths learning difficulties since 1998. She is particularly interested in devising ways of integrating SEN interventions into the classroom.
Vacancies for Educational Testing Verifiers

There will soon be vacancies available on the Educational Testing Verifiers’ Group, owing to the completion of Verifiers’ terms of office.

The purpose of the Society’s standards in test use is to define and maintain standards of assessment use concerning ability/attainment, personality and related attributes. Educational Testing Verifiers work to verify the assessment methods of Assessors, ensuring that delegates on subsequent training courses meet the required test user competencies.

At this stage expressions of interest are invited from Chartered Psychologists who hold the Society’s certificates in educational test use at the level Test User Educational: Ability & Attainment (CCET) and who hold a current entry on the online Register of Qualifications in Test Use. In addition applicants should also be a currently Verified Assessor at the level of Test User: Educational, Ability & Attainment.

Commitment required:

■ Work as part of the Verifiers’ group to monitor the standards of assessment carried out by Assessors, across the UK (approximately 10 days per annum).
■ Attend Verifiers’ group meetings (four meetings per annum).
■ Maintain and develop knowledge relevant to the content and conduct of the Society’s qualifications in psychological testing.
■ Act as a representative of the Society when undertaking verification and quality assurance duties.

The person appointed will:

■ be involved in training and assessment in educational test use;
■ have a sound understanding of current issues in testing;
■ have good interpersonal skills to facilitate positive and constructive relationships with colleagues, Assessors and test users; and
■ be willing to undertake professional development.

Appointments are for one year initially. A full Verifier’s term is for four years.

Verifiers will be financially compensated at rates determined by the Society. (Rates are available on request).

Please contact Mala Pancholi at the Psychological Testing Centre 0116 252 9536 or email mala.pancholi@bps.org.uk for a Statement of Interest Form and Role Profile.

Informal enquiries can be forwarded on to the Senior Verifier, Alan Macgregor.
The real value of free writing
Jonathan Ferrier

The aim of this study was to find out how many children have Specific Learning Difficulties that had not been picked up in primary school. It was therefore decided to obtain 20 minutes’ free writing from every student in the new intake (year 7) in two secondary schools in an Oxfordshire town, during their first term in the school. It became apparent during the analysis of the students’ essays that a more structured approach to evaluating them would yield far more useful information about the students’ difficulties, and that is the subject of this paper.

Method
In total, 364 pupils carried out 20 minutes’ free writing using the guidelines set out by Allcock (2001).

Essays were assessed under five separate headings:
A. Writing speed in words per minute.
B. Handwriting/legibility.
C. Spelling.
D. Punctuation.
E. Grammar.

Each of the above criteria (apart from writing speed) were judged using a five-point scale:
1. Very good/excellent: good by adult standards.
2. Good: good for an 11-year-old.
3. Reasonable: acceptable, as within the range of normal for an 11-year-old in 2011.
4. Poor: below an acceptable standard for the age group.
5. Bad: virtually illiterate – impossible to make out what the child was trying to say.

These measures are open to the criticism that they are the subjective opinion of one person. However, it is also possible to use objective criteria for judging these measures, and they are described below under the separate headings. This assessment focused on writing technique – that is the ability of the children to get their ideas down on paper in a way that a reader can understand. Although every word had to be read, the quality of the essays was deliberately not assessed.

Results
A. Writing Speed
Writing speeds were far slower than predicted. The speeds listed in Allcock’s published guidelines for year 7 are 13.9 wpm (average), with 25 per cent slower being 10.4 wpm and 40 per cent slower being 8.3 wpm. The average for the year 7 children in the current study was 8.94 wpm, which means that 70.2 per cent of these children would be more than 25 per cent slower than the published average and would therefore be eligible for extra time under Allcock’s guidelines, while 48.3 per cent were below the speed that would make them eligible for a scribe. One of the two schools in this study sets the children for English
by ability, the other does not. Overall, the more able students wrote faster than the less able, as would be expected. However, a far greater effect on writing speed was independent of ability, with some classes writing significantly faster than others, and clearly the main effect here was due to the teacher. It would appear that some of the teachers encouraged their pupils to plan their essays in much more detail and so the children had spent far longer than the official two minutes of planning time, which meant that they therefore had a far shorter writing time. Nevertheless, there appeared to be a distinct cut off at 5-6 wpm, below which all the children appeared to have considerable problems with their handwriting.

B. Legibility
At first glance, the handwriting of some 11-year-olds may be regarded as illegible because it is uneven, untidy and contains many spelling mistakes. On the other hand some writing may look legible because it is neat and even. However, the real test is whether you can read virtually every word without having to re-read the text, and whether every letter is recognisable when words are taken out of context. Equally, it is important (particularly in the case of dyslexic students) not to confuse poor spelling with illegibility. On these grounds, 18.9 per cent of the students had handwriting that is unacceptable for an 11-year-old. In many of them the letters were poorly formed, uneven in size and quite often they were printed. It was obvious that these students were struggling to get anything down on paper, and they had not been helped by teachers letting them get away with forming the letters badly (e.g. writing ‘d’ like a Greek α, and writing ‘f’ like an ‘s’ with a line through it).

C. Spelling
When analysing free writing produced by 11-year-olds, the acceptable level of spelling errors is debatable, not least because the brighter dyslexic students are adept at finding ways around using words that they cannot spell. ‘Favourite’ is indeed the favourite word for year 7 students to spell incorrectly, and arguably, doing so falls within the normal range for this age group. On the other hand, these students should be able to spell the ‘wh’ words correctly (who, why, which, what and where) and certainly such words as have, some, very, little, etc. On these criteria 18.5 per cent of the students had unacceptable spelling, which is probably the most useful single pointer to dyslexia, although of course there may be a number of reasons why students have difficulty with spelling.

D. Punctuation
For those students that are struggling to get anything down on paper, punctuation is just one step too far. It is therefore hardly surprising that the students with the handwriting and spelling difficulties described above, often use very little punctuation even when they know where they should do so (for instance, capital letters at the start of a sentence). However, there was also a group of 11-year-olds who knew the basic punctuation and did not appear to be dyslexic or dysgraphic, but did not make the effort to use punctuation consistently or read through what they had written. Finally, there was a significant number of children who still had not grasped what makes a sentence. This group included some dyslexic and dysgraphic students, but also quite a number of children who were obviously of low ability. They either used no punctuation at all or simply scattered full stops through the text, with no reference to what they had written. If they used a full stop they usually followed it by a capital letter, but that was the limit of their punctuation.
**E. Grammar**

Grammatical errors also tended to fall into three distinct groups. Firstly, there were those children who wrote as they spoke, making the grammatical errors that they used in everyday speech. Although most children are aware that they should use a ‘posh’ version of English for writing essays, there are others (perhaps from more linguistically deprived backgrounds) who have not appreciated this or simply do not know how to write that sort of prose (e.g. ‘I done the most painfulllest warm up in my life’). However, I do not consider these to be grammatical errors and would much rather that, at age 11, the children continue to get their real speech down on paper. The second group tend to be the dyslexics who often omit small words because they are concentrating so hard on spelling the difficult words (a feature that all SpLD teachers will recognise). Finally, there are the EAL (English as a second language) students who may be completely fluent in playground English, but still have some difficulties with the written language.

**Discussion**

For a class teacher this task could well prove very helpful, particularly if the writing is analysed using the above headings, which would then show up those children who need a dyslexia assessment, or help with handwriting, or merely teaching what makes a sentence.

As a measure of handwriting speed the task was far less useful and this may have been partly due to it being administered as a group exercise which was not focused on the amount written. To some extent this problem may be overcome when a free writing test is administered by a specialist teacher to one individual (or a small group) during an assessment for access arrangements, as is now required by the JCQ (2011). However, the extreme variability in writing speeds suggests that free writing is not a very satisfactory way of measuring writing speed and it should probably be backed up by other tests.

**Conclusions**

Allcock helped establish free writing as a useful assessment tool. It has some weaknesses as a stand-alone measure of writing speed, being susceptible to the attitude of the student and the input of the administrator/teacher. On the other hand it can provide valuable information about the student, if the piece of writing is analysed under separate headings such as speed, legibility, spelling, punctuation and grammar. These highlight those areas in which he/she has particular problems, pointing to those who need further assessment or specialist help. In this respect free writing is a most valuable part of an assessment.

**References**


**The author**

Jonathan Ferrier was a GP for 25 years before training as an SpLD teacher and assessor in 1999. He has been conducting SpLD assessments for two large state secondary schools for the past eight years.
HISTORICALLY, dyslexia has been regarded as an educational matter, so much of the language and practice surrounding it belongs to the world of education, particularly special education, and we find it very hard to get away from it. Even the generic term ‘learning difficulty’ is inappropriate for many dyslexic adults. Dyslexic people can find learning difficult, but in the adult years their ability to perform in social, family and work settings is of greater concern.

Often the practices adopted when working with children, including assessment and teaching, are inappropriately generalised for work with adults (Price & Patton, 2002). Dyslexia is a hidden disability and this means that dyslexic people often have to advocate for themselves, their difficulties being less obvious and less well understood. Many struggle with the issue of disclosure but, if they wish to access resources and be protected under the terms of legislation, they must. The process of disclosure has been interpreted within a framework of acceptable loss versus potential gain (Gerber, 2006). Individuals must balance what they might lose and what they might gain through disclosure.

Success: risk and resilience
Although much research has been devoted to identifying the factors that make life difficult for dyslexic people, researchers have adopted a risk and resilience framework in order to understand successful adjustment. People who have dyslexia can be at risk of failure in academic and employment settings, as well as experiencing social and emotional problems. Research into resilience aims to understand the processes that account for good outcomes (Masten, 2001), and has considered the multiple factors, both internal and external, that influence the outcome for people.

Several variables that contribute to resilience and success have been identified. Self-understanding and that of others have been shown to be fundamental (Madaus et al., 2010). The diagnostic assessment should be viewed as part of the process of developing both, not just an exercise in labelling. The report of that assessment is a form of advocacy that should lead to a dyslexic person, as well as those working with them, being better informed than they were, not more confused. When working with adults it is essential to remember that reports, although read by professionals working in education who might be familiar with the terminology, often end up in the hands of individuals who have no such background. Formats designed for reporting the results of the assessment of children, as well as adults still in formal education, are inappropriate.

Reports: content
Written reports of assessments are only as good as the information they generate and reports are useful only to the extent that they convey information clearly to the dyslexic person, as well as those supporting them, including employers. A dyslexic adult should feel comfortable about showing a report to people, such as a Personnel Manager, who will not necessarily be trained in test interpretation. Furthermore, managers do not usually
have access to the IQ scores of employees, and there is no reason as to why the dyslexic person should be an exception. The same argument holds for university students as, although academics might have a better understanding of the language in a report, knowing a student’s IQ might affect their expectations of them.

Therefore, in writing the report the author should consider whether it will help the dyslexic person understand and address their difficulties, and whether it will help tutors and employers support them. The report should:

- be clear and concise;
- describe abilities and skills;
- provide an explanation;
- address the immediate and the future; and
- recommend evidence based solutions.

It should be as jargon-free as possible, because the language can be misinterpreted. Statistical terms such as significance can be confused with real-life significance, when it might in fact be of no practical importance. Even ‘mean’ and ‘average’ can be misinterpreted. Statistics can support and provide evidence for a diagnosis. They can also mask functional limitations. An average score on a standardised test does not tell the whole story. They do not reflect the effort required to gain such a score and behavioural observations are therefore essential.

**Reports: format**

We have, therefore, developed a tripartite reporting system. It begins with a brief summary. This is followed by recommendations for skill development, technological solutions and adjustments. The recommendations are specific enough to address areas of difficulty, but sufficiently general to allow for experimentation and the client’s own perspective. Many adults have persisting difficulties with performance because of the ‘one size fits all’ approach to education. Having been identified as dyslexic, they do not need the same approach. There is no ‘average dyslexic’.

There follows a separate diagnostic section which provides the evidence for the conclusion and interventions. It is descriptive and does not include scores. Tests are named with a simple indication of what they measure. A vocabulary test, for example, is referred to as ‘defining words’. Terminology includes ‘weak’ rather than ‘below average’, ‘competent’ rather than ‘average’ and ‘good’ rather than ‘above average’. Terms such as significance are avoided. Literacy levels are reported from the perspective of functional limitations, as well as whether competency is sufficient as to be addressed by technology. Standard scores and percentiles do not provide an indication of the latter.

Test scores are summarised using a tabular format in an appendix. Each part of the report is provided as a separate document so that the client can make them available at their own discretion, or so that employers can distribute only those sections that are relevant to individuals within the organisation.

**Summary**

Understanding, including self-understanding, has been identified as a key factor contributing to the success of adults who have dyslexia. The effective reporting of the findings of an assessment can contribute to this. Reports of assessment can lessen disadvantage by help to minimise loss and maximise gains.
References

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Practitioner-based Research Studies
– Digested Research Summary

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Participants: State if national/international sample.
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