

“The Development of Web-Based Assessment for Tri-Service Selection: A Series of Questions?”

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Summary

From work funded by the MoD, Corporate Research Programme, we have reached the stage of examining the Internet as a means of selection for the Armed Forces. Previous work has looked at computer-based testing, adaptive testing and the introduction of common tri-service selection. Currently the UK Armed Forces share physical locations and some processes in their recruitment but each has its own selection test. One potential future is to form a tri-service selection system, including a management information system and web-based assessment. The potential of the Internet is already being exploited by the Services for marketing purposes, but has greater potential still. Already, the Armed Forces and other organisations are using web-sites to advertise positions and recruit personnel. This is creating competition for the potential candidates for the Armed Forces. There is potential to expand the use of the Internet to streamline the recruiting and selection processes. This paper raises some of the many questions that require answers before we can leap into this brave new world.

Where are we now?

The UK Armed Forces currently use three selection tests for their recruitment. The Royal Navy use Recruiting Tests (RT), the Royal Air Force use Airman Selection Tests (AST) and the Army use British Army Recruiting Battery (BARB). All these tests are for gate-entry level and are broadly measuring general intelligence. Meanwhile, other aspects of the selection and assessment system have been brought together, such as the physical location of recruitment offices. In addition, the Services are moving towards a common management information system.

There is the potential for a new common computer-based test or tests for initial selection to be developed for all three Services and integrated with the common management system. Indeed, adopting a common administrative process as well as a common tri-service test could make large cost savings, (Dukalskis et al, 2001). The Internet may provide a way of exploiting any new system to its full potential.

Is there a brave new world ready to be exploited?

There is no doubt that web-based technology is still a fast growing arena. Within the UK, 7.8 million households had access to the Internet last year (CyberAtlas, 2001). This is more than three times the number of households that had access in 1998. World-wide, the Computer Industry Almanac has forecast that nearly 8% of the population (490 million people) will have access to the Internet in 2002 (CyberAtlas, 1999).

Within recruitment, the Electronic Recruiting index (ERI, 2000) has shown an increase in the amount spent on recruiting over the Internet from \$4.5 billion in 1998 to \$15 billion in 1999. The advantage of using the Internet for the organisation is the ‘free’ assessment time and limited costs involved. The potential candidate spends their own time online and very little resources of the organisation are required.

So what could we include in web-based assessment?

We can use a web-site on the Internet for any of the following and this is not an exhaustive list:

1. Providing careers information
2. Pre-screening
3. Applications
4. Psychometric Selection testing

5. Interviews
6. Assessment centres
7. Reference checks (medical, criminal and credit checks).

There are many strengths and weaknesses for using these different activities. The issues are generally not technical. Areas such as interviewing by video-conferencing are a reality. The technology exists to deliver selection tests and it is relatively straightforward. We are theoretically strong in some areas, including item generation, item response theory and computer-based testing. In addition, computers open the way to many new types of items, for example using dynamic items and adaptive tests, and tests that can measure both accuracy and response latency (Bartram, 1999). However, very few recruiters currently use online selection (Baron et al, 2000).

One possible image of the future?

A potential candidate may be surfing the web one night. He or she will come across a web-site for the Armed Forces. This site has information on the different roles available in all the services. It has a web-camera on a naval ship, within an aircraft hanger and at an Army base (subject to security of course). It provides an interest inventory to help the candidate narrow their search. There is a 'frequently asked questions' section and realistic job previews written by serving personnel. The candidate decides they are interested and completes an application form, including a medical questionnaire (that is adaptive) and a biodata form. Automatic screening for eligibility is already underway. The candidate is automatically taken to a page where they book their testing session and any medical screening requirement. The next link provides ample practice opportunities on the selection tests. The tests are computer-based and take them through the gate-entry level on to a series of specialist tests if they meet certain criteria. They can be taken at any local Internet centre where a professional individual can authenticate the candidate's identification. The candidate goes on to book an interview with the Careers Officer who has all the information available on the Management Information System.

In an ideal world, this process could be seamless. However, before we leap into this fantasy, there are many other practical issues of concern and a large number of questions that require answers.

Will the Internet reach all potential applicants?

Accessibility: We have heard of the Internet's growth and that nearly 8 million UK households have access. However, access and actually using the Internet are two very different things. Of visitors to Internet job sites, 70% were employed not currently seeking (monitors); 15% are employed, and thinking about changing jobs (opportunists); and only 15% are actively seeking a new job (active searchers), (ERI,2000). Also, currently the majority of all the job-sites and research is for graduate and professional recruitment. How does this look against the 'typical' potential candidate for the Armed Forces?

It has been considered that within 5 years the Internet would be available to all potential applicants (Baron et al, 2000). However, potential candidates are usually young and therefore, more likely to use the Internet, but they may not use it in the context of looking for a career. Is there a difference between those that use it (and the way in which it is used) and those that don't and will the organisation miss out as a result?

Potential growth: The forecast for Internet access in 2005 will be 11.8% of the world's population. This is an increase of 4% compared with forecasts for 2002 (CyberAtlas, 1999). However, is this estimated growth too optimistic? We have seen the slow-down of the mobile phone market and the failure of technologies such as e-books that were once viewed as optimistically.

Speed of recruitment: The Internet is likely to make the application process faster. For Army applicants, average wait was found to be around 20 weeks, potentially this could be halved to 10 weeks as CyberAtlas reports an average of 16 days versus 32 days using traditional methods of recruitment (CyberAtlas, 1999). Also, the modal average number of visits to Careers Offices is 5 and is likely that it could be reduced considerably (Hawxwell et al 1997). A recent survey of Royal Navy recruits showed that delays in the recruiting process was one of the reasons most off-putting for potential recruits (Fothergill & Taylor, 2000). This study also showed that females and ethnic minority candidates were more reluctant to approach a careers office directly than their majority counterparts .

Understandable web-sites: Many recruitment web-sites were found to be confusing and badly designed (Baron et al, 2000) and as a consequence were too difficult to use. There needs to be a good understanding of web-based design and formats and how these can be easily used and understood by any potential applicant.

Is the Internet secure and confidential?

Much of the technology for transmitting data across the Internet is actually more secure than many other forms of communication. However, the belief that the systems are secure is not there. This belief in security and confidentiality is especially crucial when reference checks are required, such as medical and criminal screening. Also, the idea of all this information being available through the Management Information System could be viewed with scepticism. In the UK, the Data Protection Act must be followed and again, best practice should be identified.

Is the actual applicant the one who is completing the process?

Authentication: Ensuring the applicant is the one who is completing the process is especially critical when it comes to selection testing. One option is to use remote testing stations with an administrator or some professional whom could authenticate the candidate's identity. However, this limits some of the advantages of web-based recruitment, such as the candidate not having to travel.

But, a question not answered is would individuals' cheat? There is little evidence on this. Although technology such as fingerprints or retinal scans are feasible, there may not be any need to resort to this technology. Perhaps a methodology could be for the candidate to sit the tests at their chosen location and then validate results by administering a parallel form of the same tests to a random percentage. An alternative would be to use tests and measures that are less prone to cheating. For example, measures where it is in the candidate's interest to be honest, or where it is difficult to determine what the correct response might be, e.g. biodata forms and interest inventories.

How can the process be administered fairly?

For selection tests: Internet access is available at home, school, work, Internet centres, and Internet cafes. How will these provide standardised conditions for testing purposes? What will become of formal training in the administration and interpretation of selection tests? The computer will be relied upon very heavily (creating a black box) to provide the fair administration and feedback on assessment tools.

Practice: Practice is required on selection tests to ensure a level playing field for all the candidates prior to testing. The Internet could be used for this but it depends particularly on the accessibility and hence, we return to the beginning!

Security of Test Materials: The distribution of test materials, freely accessed across the web, also raises questions of test security and the need to safeguard the intellectual property rights of test developers. A lowering of security of test materials could shift the commercial interest away from publishing tests per se to a greater emphasis on test interpretation and models for optimising selection decisions.

What are we doing about this?

The MoD, Corporate Research Programme is funding a project lasting up to three years to examine this area. The programme of work for this year will involve examining the UK Armed Forces needs' and assessment of web-based technology. We are aiming to discover the current research that is available and identify shortfalls, perhaps with a view to develop and trial different selection processes in the future. Initially, we shall be looking at using the Internet for screening potential candidates.

Conclusion

This paper is intended to stimulate debate and organise further research. There is a future for web-based assessment. Many organisations are using the Internet for recruitment purposes already. This is increasing the competition for candidates and has placed the Services alongside international and foreign organisations as well as UK ones. As a consequence, we have not got the time to spend years investigating and answering these questions. However, we are beholden to ensure selection systems are fair and ethical, not only for our

own professionalism, but also to ensure we get the best for our Services. There is a need for research to catch up with the technology. What is necessary is for research to be co-ordinated in this fast moving area.

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