Personnel selection in the digital age: a review of validity and applicant reactions, and future research challenges

Stephen A. Woods, Sara Ahmed, Ioannis Nikolaou, Ana Cristina Costa and Neil R. Anderson

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This paper presents a targeted review of recent developments and advances in digital selection procedures (DSPs) with particular attention to advances in internet-based techniques. By reviewing the emergence of DSPs in selection research and practice, we highlight five main categories of methods (online applications, online psychometric testing, digital interviews, gamified assessment and social media). We discuss the evidence base for each of these DSP groups, focusing on construct and criterion validity, and applicant reactions to their use in organizations.

Based on the findings of our review, this paper presents a critique of the evidence base for DSPs in industrial, work and organizational psychology and set out an agenda for advancing research. We identify pressing gaps in our understanding of DSPs, and ten key questions to be answered. Given that DSPs are likely to depart further from traditional non-digital selection procedures in the future, a theme in this agenda is the need to establish a distinct and specific literature on DSPs, and to do so at a pace that reflects the speed of the underlying technological advancement.

In Summary, our review of the literature has highlighted significant developments in DSP research, implications for concomitant selection practices, and demonstrable need for future research into DSPs. However, it is also evident that the approaches and techniques that have been applied in conventional non-digital selection procedures need to be adapted to meet the demands of the digital format of assessments methods and the data that they produce. Our view is that the application of DSPs have forged ahead of scientific research and that in some areas organizations are using these new technologies rather "blind" to their validity, adverse impact, privacy, or impact on applicants.

Given the speed of advancement of some of the pertinent technologies this is perhaps unsurprising; what is now called for is a period of realignment between research and practice in IWO psychology in our view where these concerns can be examined and addressed by applied research efforts into DSP in employee selection. Many researchers have called for updated technology-based models of recruitment and selection (e.g., Black et al., 2015; McCarthy et al., 2017; Morelli, Potosky, Arthur, & Tippins, 2017; Potosky, 2008) to conceptualize and create more specific, theory-driven hypotheses for technology now utilized in the personnel selection arena. Based on our review of the literature on DSPs we would go further, therefore, and extend a call to action to both researchers and practitioners to embark on a rapid and wide-ranging collaborative undertaking to establish a more rigorous and comprehensive evidence base for the application of DSPs.

All of the implications of our review point to the need for a new multi-disciplinary research programme on selection methodology for the digital age. In this programme, DSPs should take a specific place alongside conventional nondigital formats. For example, we should consider digital interviews to be a technique in their own right, rather than as an alternative for conventional interviews. Their application in practice should, like non-digital methods of the past, be based on evidence that they are psychometrically effective in the context of selection. As a result of such a programme, we may find that digital formats are superior replacements for methods of the past. Yet the utility of digital methods must be viewed beyond whether they outperform established techniques.

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There may be legitimate reasons, for example, why a digital assessment is considered more suitable by an organization than a non-digital one (e.g. it might create lower adverse impact for minorities, improved applicant reactions, or a better candidate experience), provided that criterion validity has been evidenced independently.

Addressing these needs presents a significant transitional opportunity for IWO psychology. The pace of development of digital technology is increasingly incompatible with the slower processes of research dissemination in the field. The rise of DSPs is one of the most prominent early manifestations of this tension. Maintaining the centrality of our research evidence in the practice of selection will require changes to how we make available the findings of research to ensure they are relevant to state-of-the-art practice. But this issue is not peculiar to selection research, and rather is reflective of the impact of digital technology across business and management. Successfully meeting our call to action requires new learning by psychologists about the epistemologies, techniques and challenges of multi-disciplinary teams, and clarity about the benefits that psychologists can bring (i.e. the incentives for others to collaborate with us). However, by doing so and adapting to the digital age, selection researchers have an opportunity, as arguably in the past, to lead development of the tools, methods and processes of IWO research and practice, and ensure its continued impact in, and relevance to, organizations in the future.

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