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Burgeoning enrolments and stubbornly low throughput rates underscore the importance of evidence-based approaches to curriculum review and student support in digital literacy education. While automated assessment systems are commonly employed to improve the efficiency and consistency of grading, the rich item-level data they generate often remain underutilised.

This paper presents an exploratory assessment analytics framework applied to six large-scale assessments of Microsoft Word, Excel and PowerPoint competencies administered through a custom automated grading system. Drawing on several thousand assessment attempts, the study employs classical item analysis techniques, including facility indices, discrimination indices, score distributions and reliability measures, to evaluate both student performance and assessment quality. Particular attention is given to the visualisation of item characteristics and the identification of patterns that may indicate problematic assessment items, competency gaps, or differences in performance between student cohorts enrolled in different academic programmes.

The paper argues that assessment data can serve purposes beyond the generation of marks. By analysing how individual assessment tasks perform across large student populations, it becomes possible to identify areas requiring pedagogical intervention, support continuous improvement of assessment design, and establish a more systematic basis for curriculum enhancement. Preliminary findings suggest that relatively simple analytical techniques can yield actionable insights for educators seeking to improve student success in high-enrolment digital skills courses.