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An effective solution to a many-bodied problem in first-year physics

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At Nelson Mandela University (previously NMMU) over the past 4 years, the first-year Physics student numbers in the main stream courses have gone from 140 students to over 500. This has strained the lab capacity, equipment and staff of the department. Late 2017, it was apparent that the current system would not be able to support the influx of students from the new Bachelor of Engineering Technology course offered by the university. In response to this, a document was drawn up based upon the SAIP Benchmark Statement. This document was entitled 'Graduate Skills and Attributes Framework'. It outlined the skills and attributes the department deemed important for Physics students to attain during their studies. The entire practical course was overhauled. Practicals were selected and redesigned to not only improve the efficiency of delivery but to focus on specific skill development. The total number of practicals decreased within the introduction of a week dedicated to the pre-practical preparation and assessment of the students. Post-practical assessment was also included so to ensure each students engagement of the practical.

This paper discusses the developed First Year Practical Course within the Physics Department at Nelson Mandela University. The paper focuses on the benefit of an online system for pre-and-post practical assessment and problems associated with the new system.

Apply to be
 considered for a student
   award (Yes / No)?

Yes

Level for award
 (Hons, MSc,
   PhD, N/A)?

PhD

Primary author: Mr DIX-PEEK, Ross (NMMU)

Co-author: Ms WESTRAADT, Lindsay (CHRTEM, Nelson Mandela Metropolitan University)

Presenter: Mr DIX-PEEK, Ross (NMMU)

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