
HARNESSING DIGITAL TECHNOLOGIES TO ENGAGE STUDENTS WITH OPEN INVESTIGATIONS IN SCHOOL SCIENCE

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Can digital technologies be harnessed to engage students with open inquiry? Here, we examine if the inclusion of a spreadsheet was successful in engaging students with open inquiry. The investigation was designed using design-based research methodology and was deployed in three trials. In trial 1, students and teachers were provided with electrical devices and requested to design and carry out an open inquiry investigation regarding the amount of electrical power consumed. In trial 2, the students and teachers were asked to select a device, take a measurement and enter it into a pre-constructed spreadsheet and then to design and carry out their own open inquiry investigation. In trial 3, the modified design from trial 2 was finalized. Data were collected on: (a) 'mental effort' expended by students in doing the investigation, (b) students' comments and (c) teachers' perceptions on the 'openness' of the investigation. In trial 1, while teachers invested mental effort, students did not. In trial 2, both teachers and students found the investigation valuable and invested mental effort. Trial 3 consolidated the results of trial 2. We conclude that the integration of open inquiry with digital technologies can lead to an increase in student engagement.

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