An evaluation of the Socrative (personal response system) app for increasing student engagement and learning in an undergraduate psychology curriculum.

**AN EVALUATION OF THE SOCRATIVE (PERSONAL RESPONSE SYSTEM) APP FOR INCREASING STUDENT ENGAGEMENT AND LEARNING IN AN UNDERGRADUATE PSYCHOLOGY CURRICULUM**

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**Introduction:**
Personal response systems using hardware such as ‘clickers’ have been around for some time, however their use is often restricted to multiple choice questions (MCQs) and they are therefore used as a summative assessment tool for the individual student. More recent innovations such as ‘Socrative’ have removed the need for specialist hardware, instead utilising web-based technology and devices common to students, such as smartphones, tablets and laptops. While improving the potential for use in larger classrooms, this also creates the opportunity to pose more engaging open-response questions to students. This poster will present two applications of the Socrative system in an undergraduate psychology curriculum aiming to encourage interactive engagement with course content using real-time student responses and lecturer feedback.

**Application 1: Revision Lecture**
Socrative was used at the end of a first year undergraduate psychology module on statistics, one month before a summative examination on the topic. 19 MCQs on course content (see Figure 1 for an example) were completed with students (N=73) receiving instant feedback on their responses. As well as completing MCQs on course content, students were asked to rate their knowledge of the content on a 5-point Likert scale ranging from ‘knowing nothing’, to ‘knowing everything’, before completing the MCQs, and again, after completing the questions. They were also asked to rate the usefulness of the revision session on a 4-point Likert scale, and to state any technical issues encountered whilst using the app (which were minimal). Descriptive statistics are presented in Table 1.

**Ratings of Knowledge Change**
A difference index was calculated to show the change in self-rated knowledge of content before and after completing the MCQs by subtracting pre-MCQ knowledge ratings from post-MCQ ratings; such that positive index values indicated higher ratings of content knowledge after completing the MCQ session. We expected students to be over-confident in their content knowledge at the pre-revision stage, and that this would be re-adjusted after encountering the MCQs. In fact, the opposite trend was evident, with more students displaying positive index values (see Figure 2). It appears that students became more confident in their knowledge after the MCQ experience, which may reflect the relatively good performance of the group on the MCQs (Figure 3).

**Application 2: Flipped Lecture Engagement**
Socrative was used at the end of a second year undergraduate module on conceptual issues in psychology. This module involves students learning about the philosophy of science and requires them to critically reflect on conceptual issues within psychological science (e.g. the use of metaphors and the development of theories). Ratings of this module are historically low, and students often reported finding the content ‘boring’ or ‘irrelevant’. The suspected reason for this, is that unlike all other modules, which utilise the acquisition of specific knowledge, this module requires students to critically evaluate abstract concepts, which cannot be done by traditional rote learning.

To address this, a one hour flipped-lecture was developed to allow students the opportunity to overtly practice their critical thinking skills. Students were asked to revise their knowledge on the topic of Freudian Theory in advance of the lecture, that they would be required to answer a series of conceptual questions based on Freudian Theory (e.g. Figure 4), and that these would receive formative feedback from the lecturer.

In large lecture environments, it is notoriously difficult to engage students to participate, due to fear of being incorrect and embarrassed in the presence of peers. Socrative was used to pose the questions, which required free-response answers. This allowed students the opportunity to anonymously ‘text’ in their thoughts, which were then displayed on a projector screen to the rest of the class. Student responses were integrated by the teacher to scaffold a group discussion, while providing oral feedback on students’ thinking skills and understanding.

**Student Preparation**
The success of a flipped-lecture is dependent on the students pre-preparing for the lecture, as lack of content knowledge will inhibit any meaningful engagement with the tasks presented. Students were asked about their preparation before answering the questions and their (dis)appointing responses are summarised in Figure 4.

As this was the first time these students had encountered Socrative, it may be that they hadn’t realised the benefits of participation and thus preparation. Nonetheless, incentives to ensure preparation is an important consideration for future flipped-lecture initiatives.

**Student Experience**
Due to time constraints, no quantitative evaluation of the session was done, but students did comment on the usefulness of the flipped-classroom in their module review feedback (see Student Feedback Quote text box for a typical example). They also suggested more use of the technology, across all lectures, rather than being confined to a single session, indicating Socrative fulfilled its purpose of improving student engagement with the module.

**Lecturer Experience**
The flipped lecture worked very well considering quite poor attendance and a general lack of preparation within the cohort. The students who engaged with the class provided insightful answers to the questions and contributed to the structured discussion in a valuable way. There were a few inappropriate comments to begin with, but this stopped quickly when they were acknowledged and encouraged to participate meaningfully. Students rated the module as being significantly higher in terms of intellectual stimulation and challenge (t(39)=2.1, p=.04) compared to the previous year, where this flipped-lecture was not used. Future sessions will collect student evaluations and link this to examination performance.