Introducing Screencasts to Sport and Exercise Undergraduate Students Conducting Statistical Analysis: How Useful Are They Anyway?

1. Background

- Students expect to be able to access information on demand and arrive on campuses ready to engage with information in new ways. Screencasting is increasingly being implemented into teaching at higher education. Screencasts have found to be a useful tool for students, are beneficial to learning, and are used in various educational contexts.
- Sport and Exercise students are taught research methods at Level 5 through completion of a workbook. At Level 6, dissertation support sessions are often required as students struggle to retain information and lack confidence when analysing data.
- We hypothesized that screencasts may provide a reasonable solution to this problem.

Aim: To evaluate the usefulness and effectiveness of supplementary screencasts designed to improve student’s confidence in conducting and analysing statistical data.

2. Methodology

- Seven screencasts guiding students on how to complete statistical analysis were developed.
- 28 undergraduate students participated (17 males, mean age 21.79).
- Level 6 students who attended dissertation support sessions were asked to engage with the screencasts if they were seeking help with data analysis and Level 5 students were asked to watch the screencasts during a research seminar session.
- Data was collected via a questionnaire which asked a series of questions about the usefulness and effectiveness of screencasts and if the addition of these improved students’ confidence to carry out and analyse statistical tests. Data was then screened and analysed using a series of t-tests to determine any changes in confidence.

3. Results

- On a scale of 1 (extremely disagree) to 5 (extremely agree), students thought the screencasts were easy to follow (M = 4.21), extremely useful (M = 4.07) and effective (M = 4), provided good tips to aid understanding (M = 4.17), explained the concept well (M = 4.25) and were better able to understand stats (M = 4.03), and preferred them over the workbook currently used in the module (M = 4.1). The majority of students suggested they would like to see the addition of screencasts used in teaching. However, the majority of students recommended using the screencasts alongside the workbook currently used as opposed to using the screencasts alone.

4. Discussion

- Students perceptions of the screencasts were extremely positive in line with previous research, and students’ confidence in completing statistical analysis increased as a result.
- Multimodal learning environments are environments that use different modes to represent content knowledge: verbal and non-verbal. According to modality of instructional design, the most effective learning environments are those that combine both representations of knowledge; an advantage of screencasts.
- Some students struggle with comprehending statistics. Therefore directing students’ attention to essential information using the screencasts can be an effective way to keep students from focusing on extraneous material.
- Screencasts can provide learners with a student-centered and engaging learning experience.

Limitations:
- Students were asked to report their confidence pre and post viewing screencasts at the same time.
- Impact of screencasts on student performance was not measured (e.g., assessment).

5. Implications for Practice

- By using innovative pedagogical tools students were more positive when engaging with the module content and were able to work more independently.
- The use of screencasts allowed the students to visualize the written instructions in the workbook they are recommended to refer to at Level 6; enhancing their learning experience and increasing their confidence when working through the module content.
- Students preferred the screencasts over the workbook currently used in the module, suggesting the addition of screencasts are warranted.
- Further research that objectively measures the impact of screencasts on student performance is recommended.

References


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