Implementing the One-Minute Paper Using Applications on Personally Owned Devices: Student *Perspectives on the Benefits (0329)*

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Introduction and Background

The purpose of this paper is to present an analysis of how applications on personally owned devices (APODs) were used to facilitate the "one-minute paper" (Hattie, 1987). The one-minute paper involves a lecturer at the end of a lecture asking students to write down (a) what the most important content covered in the lecture was and (b) what is the most important question they would like to have answered. The lecturer then gives feedback at the next lecture to confirm the most important content and to answer the most prevalent of the questions.

This paper analyses students' responses to the use of APODs to facilitate the "one-minute paper" so that the lecturer could give the feedback before the lecture ended, thereby speeding up the feedback. In a second-year business course at the University of Canterbury (New Zealand), the application Socrative was used to facilitate the "one-minute paper". Students were asked to discuss their responses prior to responding.

Relevant Literature

That the use of audience response systems (ARS) or APODs can be used to facilitate feedback between lecturers and students has been commented on (Han, 2014; Kay & LeSage, 2009). Others commented that this facilitation of feedback was one of the most significant benefits of the use of ARS and APODs (Blood & Gluchak, 2013) with timing of the feedback also being significant (Blood & Gluchak, 2013; Wash, 2014).

The use of ARS and APODs making learning more enjoyable was commented on by Blood & Gluchak (2013), Camacho-Minano & del Campo (2013) and Kay & LeSage (2009).

The use of ARS and APODs to enhance student engagement was highlighted by Gluchak (2013), Camacho-Minano & del Campo (2013), Han (2014), Hunsu, Adesope & Bayly (2016) and Kay & LeSage (2009) with this extending to the concept of cognitive engagement that was outlined in Fredricks, Blumenfeld & Paris (2004).

Research Method and Results

At the end of the course the 42 students completed a questionnaire that asked them to indicate their level of agreement with a number of statements on a five-point likert-scale (where 5 = strongly agree and 1 = strongly disagree). These statements are shown in the Table 1 and Table 2 along with an analysis of the student responses.

Statement	Average Rating	Percentage Strongly Agreeing	Percentage Agreeing or Strongly Agreeing
The lecturer giving feedback on what the class thought the most important thing was helped my learning	4.43	48.6%	94.3%

Using Socrative in this way helped me to feel more engaged during lectures	4.31	48.6%	85.7%
Using Socrative in this way made the lecture more enjoyable	4.29	48.6%	82.9%
Seeing what other groups thought the most important thing was helped my learning	4.17	31.4%	91.4%
Thinking about what the most important thing was encouraged me think more about the lecture content	3.97	20.0%	80.0%
Discussing what the most important thing was with the person sitting next to me helped my learning	3.89	31.4%	65.7%

Table 1 – Statements Relating to Students Identifying the Most Important Content in the Lecture

Statement	Average Rating	Percentage Strongly Agreeing	Percentage Agreeing or Strongly Agreeing
The lecturer answering the questions that were asked helped my learning	4.45	48.3%	96.6%
Using Socrative in this way helped me to feel more engaged during lectures	4.41	44.8%	96.6%
Seeing the questions asked by other groups helped me think more about the lecture content	4.31	37.9%	93.1%
Using Socrative in this way made the lecture more enjoyable	4.17	31.0%	86.2%
Thinking about questions I would ask made me think more about the lecture content	3.86	17.2%	72.4%
Discussing about questions I would ask with the person sitting next to me made me think more about the lecture content	3.79	20.7%	62.1%

Table 2 – Statements Relating to Students Stating Their Most Important Question about Content

Analysis and Discussion

In each group of statements the statement with the highest average rating (4.43 in Table 1 and 4.45 in Table 2); the highest or highest equal percertange strongly agreeing (48.6% in Table 1 and 48.3% in Table 2); and the highest or highest equal percentage agreeing or strongly agreeing (94.3% in Table 1 and 96.6% in Table 2) was the statement relating to the lecturer response or feedback, whether through confirming the most important content or answering the questions. This is consisentent with the importance of feedback that was highlighted in other studies including Han (2014), Kay & LeSage (2009) and in particular the timing of the feedback that was identified in Blood & Gluchak (2013).

Statements relating to seeing the responses/questions of other students encouraging thinking about the content; students feeling more engaged; and the approach making learning more enjoyable had average ratings of at least 4 and more than 80% of respondents agreeing or strongly agreeing. This high level of increased enjoyment and engagement along with the benefit of comparing responses

with other students was highlighted in a number of other studies including Blood & Gluchak (2013), Camacho-Minano & del Campo (2013), Han (2014), Hunsu et al. (2016) and Kay & LeSage (2009).

The two statements relating to thinking about responses/questions encouraging more thinking about content; and discussing the responses/questions with the person sitting in the next seat had average ratings less than 4.00 but higher than 3.75, with between 60% and 80% of students agreeing or strongly agreeing. While these responses do not indicate as a high a level of agreement compared with the other statements, it is still at a high level indicating benefits related to increased cognitive engagement (Fredricks et al., 2004) and the value of discussing responses.

Conclusions

The analysis suggests that the use of APODs and ARS to facilitate the "one-minute paper" has a positive impact with students particularly responding to well to the feedback of the lecturer whether it be in answering questions or reinforcing what the most important content in the lecture had been. Other important aspects responded to positively in this study included students reporting increased cognitive engagement and levels of enjoyment. Further work could be done to determine whether these issues are of differing levels of importance based on the gender, age and language backgrounds of the students.

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