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Adopting Apps In the Classroom - The Case For Technical Support

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Research Domain: The Digital University and new learning technologies (DU)

Abstract: This paper presents a further phase in a study that is being conducted into the use of applications on personally owned devices to increase student engagement in large lectures.

This phase involved of interviewing learning advisers across four higher education institutions in New Zealand and Australia regarding their perceptions of the benefits and challenges of this approach and how these relate to themes emerging from the literature.

The findings from this phase of the study regarding the benefits and challenges are consistent with the literature and highlight the importance of support for lecturers who are not innovators or early adopters (Rogers, 1995; Elgort, 2005).

Paper:

1 Introduction and Research Method

This paper continues an investigation into the use of applications on personally owned devices (APODs) to enhance student engagement in large lectures. This phase of the research examines the benefits and challenges of using APODs in large lectures from the perspective of six (6) learning advisers. An earlier phase (XXXXX, 2016) included the development and successful trial of a text message based system with the next phase involving the interviews of twelve (12) lecturers about their experiences in using APODs (XXXX, 2019) The motivation for interviewing the learning advisers stemmed from the majority of lecturers having positive experiences and not perceiving there too be many challenges involved.

2 Literature Review

The literature that forms the basis for this paper covers the benefits and challenges of using audience responses systems (ARS) and APODs in lectures.

2.1 Classroom Benefits

Increasing student attendance was one of the motivations for the use of ARS in higher education

were identified by Kay & LeSage (2009b); Han (2014); Hunsu, Adesope & Bayly (2016); and Chien, Chang & Chang (2016). The importance of anonymity was identified by Blood & Gluchak (2013); (Hunsu et al, 2016); and Chien et al (2016). Increasing student participation was identified by Blood & Gluchak (2013); Kay & LeSage (2009b); Keough (2012); and Hunsu et al. (2016). Increasing student engagement was commented on by Kay & LeSage (2009b); Hunsu et al. (2016); Carnaghan, Edmonds, Lechner & Olds (2011); Han (2014); and Blood & Gluchak (2013). Increasing student attention was also identified by Hunsu et al. (2016).

2.2 Learning Benefits

Interaction was seen as being a benefit by Flies & Marshall (2006) and Kay & LeSage (2009b) with increased discussion having been identified by Kay & LeSage (2009b) and Hunsu et al. (2016). The use of ARS and APODs as part of peer discussion was highlighted by Chien et al (2016) and Carnaghan et al (2011).

The feedback that is provided through the use of ARS and APODs was identified as being a significant benefit in Kay & LeSage (2009b); Keough (2012); Blood & Gluchak (2013); Chien et al. (2016); and Han (2014).

Using ARS and APODs for formative assessment was a benefit that was identified by Kay & LeSage (2009b); Chien et al (2016); Han (2014); and Carnaghan et al (2011), while enabling students to compare responses was identified by Kay & LeSage (2009a).

2.3 Challenges

Students not having or brining their own device was identified by Kay & LeSage (2009a), while the technology not functioning correctly and responding to student feedback were identified by Flies & Marshall (2006). Issues relating to the coverage of course content being commented on by Hunsu et al. (2016); and Flies & Marshall (2006).

The development of effective questions has been identified as a challenge of using ARS and APODs by Flies & Marshall (2006); Han (2014); Kay & LeSage (2009b); and Castillo-Manzano et al. (2016).

3 Analysis of Interviews

The analysis of the interviews was conducted using thematic analysis (Braun & Clarke, 2006) based on the themes emerging from the literature review.

3.1 Classroom Benefits

The use of applications on mobile devices to increase student engagement was identified in three of the interviews with increased student participation and attention being identified in one interview each. One interviewee commented that instead of requiring students to turn off their mobile devices, using ARS and APODs during lectures could increase student engagement. Five of the advisers interviewed identified the benefits of anonymity

3.2 Learning Benefits

The increase in student interaction was identified in by two of the interviewees with one commenting

that the use of ARS and APODs could break the traditional lecture model. One interviewee identified that if students can see that the lecturers are care about whether their students are learning that this can server to increase engagement, while another commented that the use of ARS and APODs can result in students being better prepared for classes.

That students can receive close to immediate feedback on their responses was highlighted in five of the interviews. The idea that ARS and APODs can be used as a diagnostic tool to check on student learning was commented on in four of the interviews.

3.3 Challenges

The issue of students not having a device was seen as declining in importance in three of the interviews with a fourth interview commenting that this was due to the much higher saturation of ownership of smart phones and similar devices.

Dealing with the issue of not all students having a device by using group work was identified in three the interviews. The issue of bad WiFi connectivity was identified in two of the interviews.

In three the interviews the challenge of developing effective questions was identified and seen as being one of the keys to success by one. Lecturers needing time during class to provide feedback was identified by two interviewees with a third commenting that this was more significant when the ARS and APODs were being used for open ended responses.

Students using their own devices for other purposes during lectures was seen as being a challenge by three of the interviewees, with the potential for overuse being identified in one interview.

Issues surrounding ARS in the form of clickers not functioning correctly were identified by three of the interviewees, with this leading to the observation that this was not as much of an issue when using APODs. The concern about the technology not functioning was identified in three of the interviewees as being more of an issue for lecturers with less of a technological background.

4 Conclusions

The main difference between the findings of this phase and XXXXXX (2019) relate to issues of the technology not functioning correctly. The difference appears to be related to the lecturers in the XXXXXX (2019) study being innovators and early adopters (Elgort, 2005; Rogers, 1995), while the learning advisers interviewed in this phase were mainly dealing with lecturers who are in the early majority (Elgort, 2005; Rogers, 1995) who need ongoing support so that they can smoothly and confidently adopt new technologies in their lectures to enhance the engagement of their students.

References

XXXXXX (2016) – reporting on an earlier phase of the research by the same authors

XXXXXX (2019) – reporting on an earlier phase of the research by the same authors

Blood, E., & Gulchak, D. (2013). Embedding “clickers” into classroom instruction: benefits and strategies. *Intervention in School and Clinic, 48*(4), 246-253.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2). 77-101.

Carnaghan, C., Edmonds, T. P., Lechner, T. A., & Olds, P. R. (2011). Using student response systems in the accounting classroom: Strengths, strategies and limitations. *Journal of Accounting Education*, *29*(4), 265-283.

Castillo-Manzano, J. I., Castro-Nuño, M., López-Valpuesta, L., Sanz-Díaz, M. T., & Yñiguez, R. (2016). Measuring the effect of ARS on academic performance: *A global meta-analysis. Computers & Education, 96*. 109-121.

Chien, Y., Chang, Y., & Chang, C. (2016). Do we click in the right way? A meta-analytic review of clicker-integrated instruction. *Educational Research Review, 17*. 1-18.

Elgort, I. (2005). E-learning adoption: Bridging the chasm. In *Ascilite.* 181-185.

Flies, C., & Marshall, J. (2006). Classroom Response Systems: A Review of the Literature. Journal of Science Education and Technology, 15(1). 101-109.

Han, J.H. (2014). Closing the missing links and opening the relationships among the factors: A literature review on the use of clicker technology using the 3P model. *Educational Technology & Society, 17*(4). 150-168.

Hunsu, N. J., Adesope, O., & Bayly, D. J. (2016). A meta-analysis of the effects of audience response systems (clicker-based technologies) on cognition and affect. *Computers & Education, 94*. 102-119.

Kay, R., & LeSage, A. (2009a). Examining the benefits and challenges of using audience response systems: A review of the literature. *Computers & Education, 53*. 819-827.

Kay, R., & LeSage, A. (2009b). A strategic assessment of audience response systems used in higher education. *Australasian Journal of Educational Technology, 25*(2). 235-249.

Keough, S. (2012). Clickers in the classroom: A review and a replication. *Journal of Management Education, 36*(6). 822-847.

Rogers, E.M. Diffusion of innovations. *New York*, *12*.