Examining adult learner and lecturer perspectives and experiences using Audience Response Systems (clickers) in higher education

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Introduction

This research investigated through action research the impact of clicker-use on third-level veterinary nursing students and their lecturer. The study assessed how different methods of clicker-use in class influenced learner engagement and motivation in lectures, and how the assimilation of clicker quizzes transformed the lecturer's pedagogical design of classes.

Turning Technologies ™ clicker

Aims & Objectives

The aim of this action research was to explore how having the facility to answer anonymously and receive immediate feedback effected student engagement and motivation and modified the educator's pedagogical design of classes, within the setting of an undergraduate veterinary nursing pharmacology module in Athlone Institute of Technology (AIT), Athlone, Ireland.

Why Clickers?

Published literature highlights the potential benefits of clickers as a tool to enhance student engagement and learning and to improve the pedagogical practices of the educator using them (Hunsu *et al*. 2016).

The researcher observed that most students in veterinary pharmacology lectures were unwilling to answer questions verbally, and that there was little interactivity in lectures.

Clickers were trialled in this research as one possible aid to enhance engagement and interaction, to provide immediate feedback to both lecturer and student on their progress, and for the researcher to develop a more student-centred teaching method.

Methodology

This study employed an action research methodology (Figure 1) to investigate the effect of clicker-use in veterinary nursing pharmacology lectures. The initial problem of low engagement and interactivity levels was identified, a change in teaching practice was then implemented, and data on aspects of the learner and lecturer experience were collected and analysed (McNiff 2002).
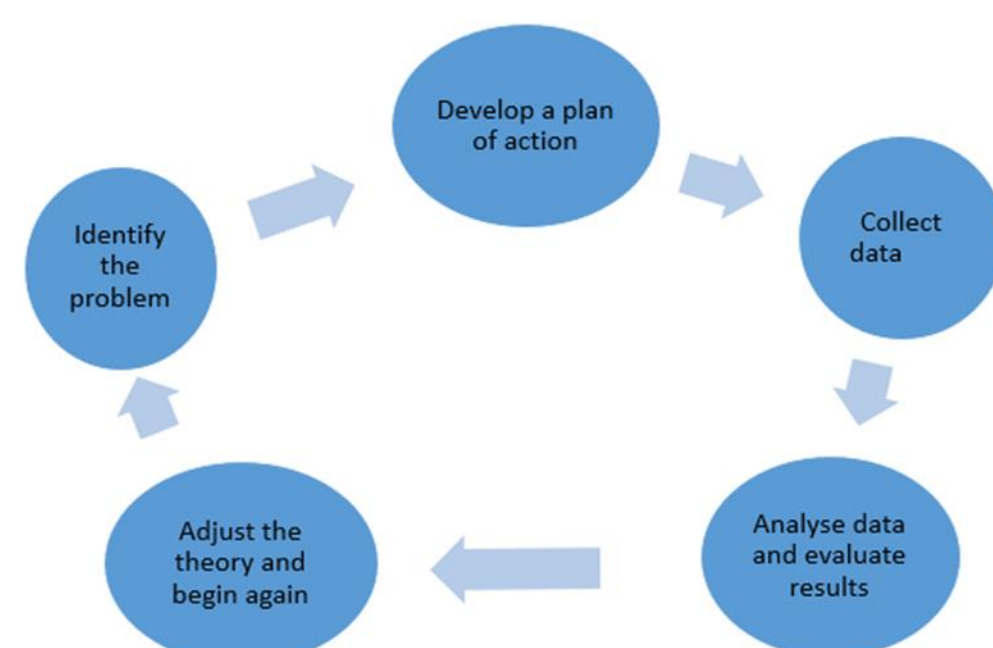
Figure 1: The Action Research Cycle

A mix of qualitative and quantitative data collection methods were employed to provide data depth and breadth, and these data were subsequently analysed to elicit findings from the research. Data were gathered from student surveys, focus groups, and software records, from non-participant observations, and from lecturer observations, reflections and teaching materials (Figure 2). Data collected from students, from a non-participant observer, and from the lecturer provided three source clusters (Figure 3) on which to triangulate findings, thereby providing a more complete overview of results.
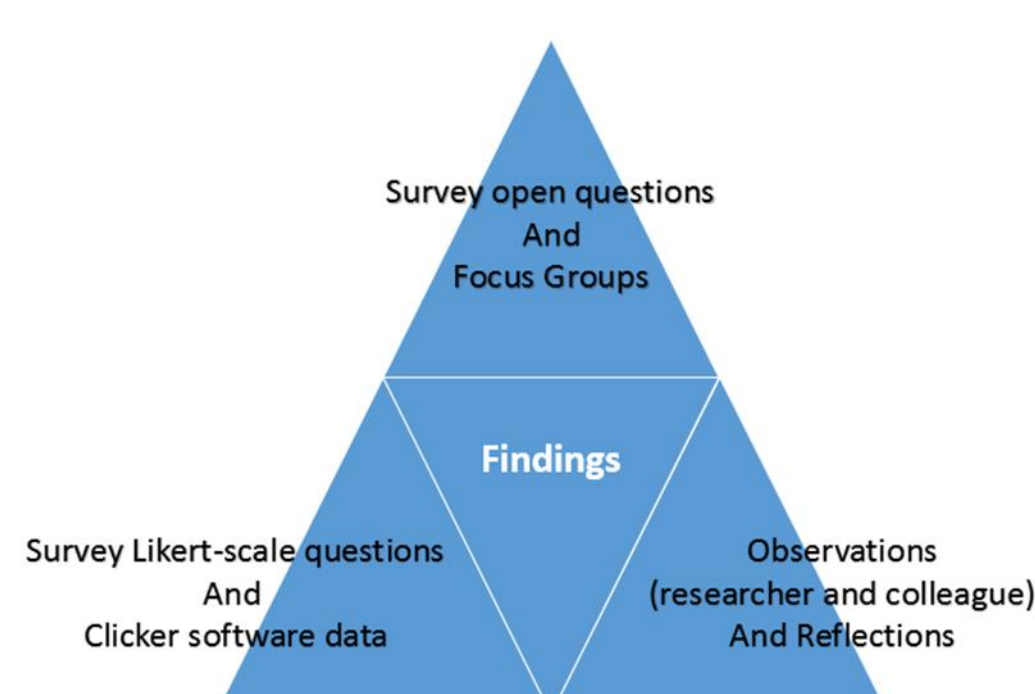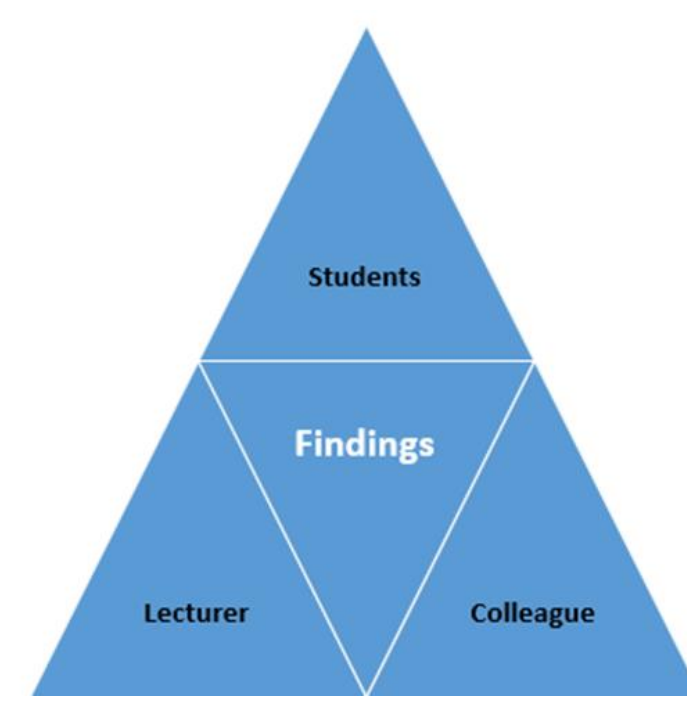
Figure 2: Data instrument Triangulation

Figure 3: Source Triangulation

Discussion

Findings from this study indicate that having the facility to answer anonymously and gain immediate feedback, by using clickers in veterinary nursing education, enhanced student engagement and motivation. The positive impact of clickers was greatest when a student-centred pedagogical design of classes facilitated active-learning, stimulated higher-order thinking and promoted peer-learning.

Future Potential

There is scope for consideration of clickers, and other aids which help to deliver student-centred pedagogy, within other veterinary nursing programmes, in other educational domains in AIT and in other educational institutes.

Findings

Findings on student engagement and motivation from all data sources and instruments were supportive of clicker-use. All students surveyed believe clickers to be an excellent (82%) or good (18%) educational tool (Figure 4).

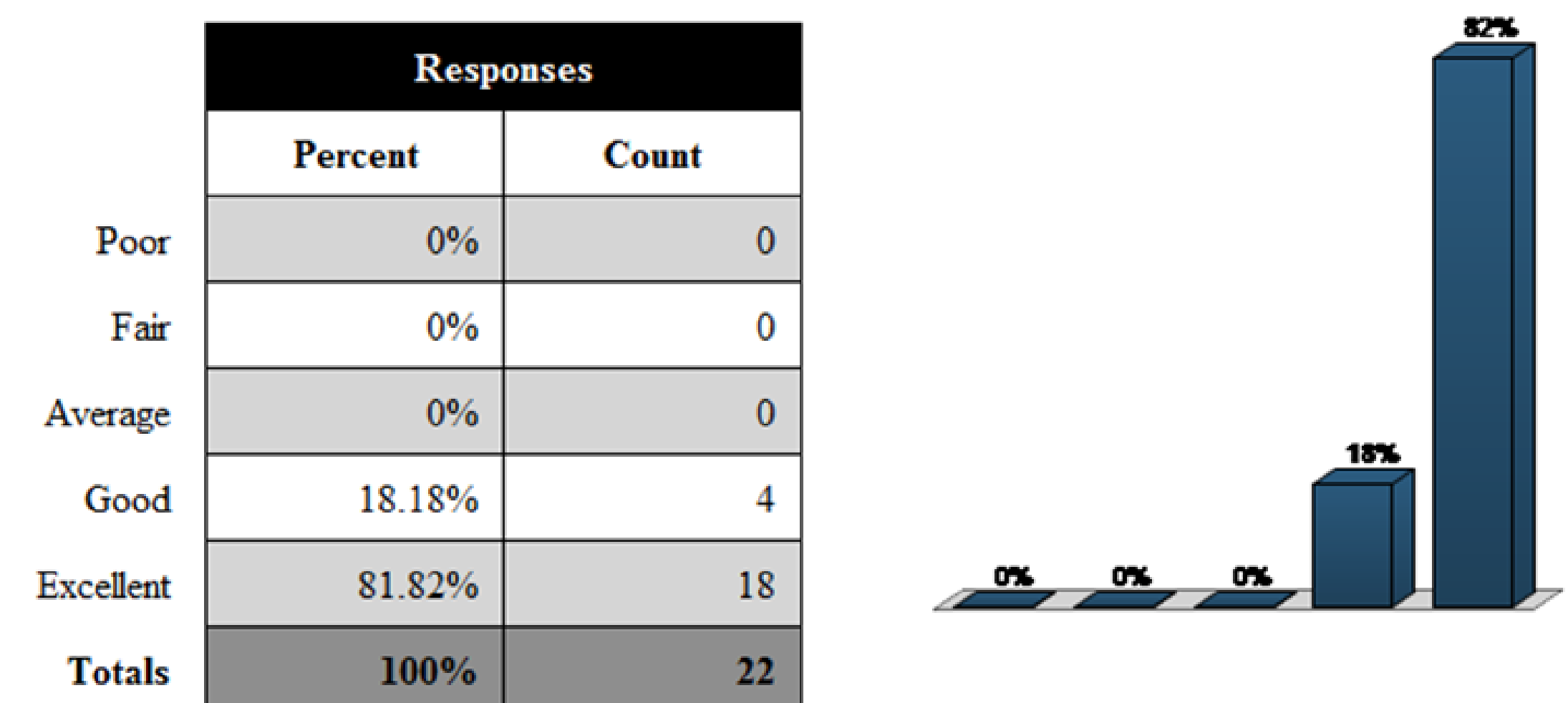Q13. Overall how would you rate clickers as an educational tool? (Multiple Choice)

	Responses	
	Percent	**Count**
Poor	0%	0
Fair	0%	0
Average	0%	0
Good	18.18%	4
Excellent	81.82%	18
Totals	100%	22

Figure 4: Survey Responses on Overall Opinion of Clickers

Students reported an increased interest in class due to the requirement to actively answer questions, the need to pay attention to determine the answers, and the break from the traditional didactic lecturing format (Figure 5). Other data collection sources supported these findings.
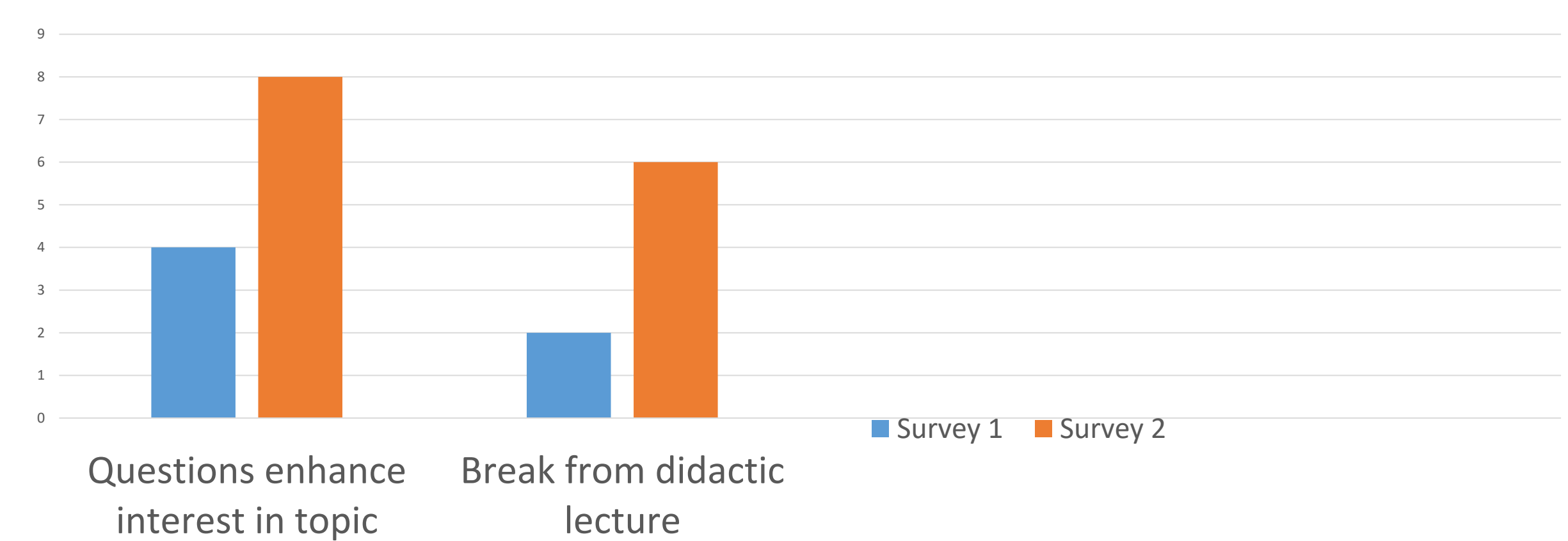
Figure 5: Survey responses on benefits of clicker-use for interest in class

Students surveyed stated that anonymously answering clicker quizzes made them actively involved in class and increased their interaction with the lecturer (Figure 6).
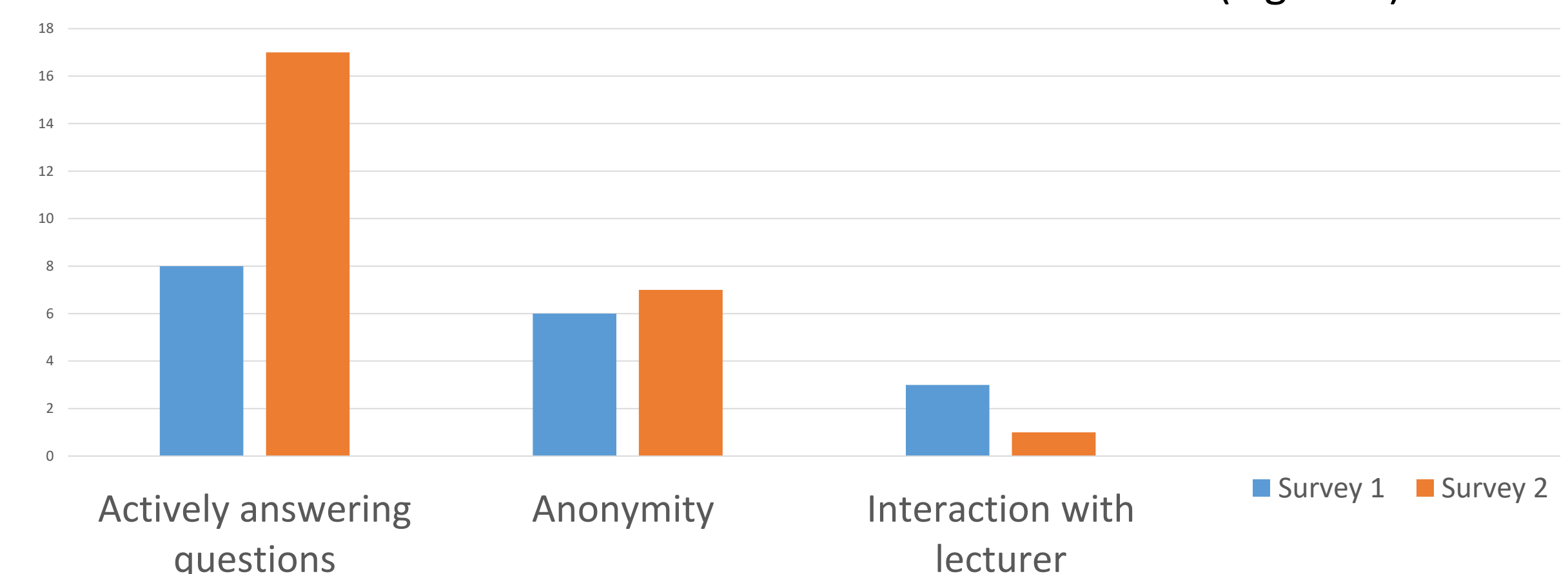
Figure 6: Survey responses on benefits of clicker-use for active participation in class

Motivation to learn increased due to the desire to answer questions correctly and learn from mistakes (Figure 7). Students felt more motivated to answer questions correctly when the content had real-world veterinary nursing applications.
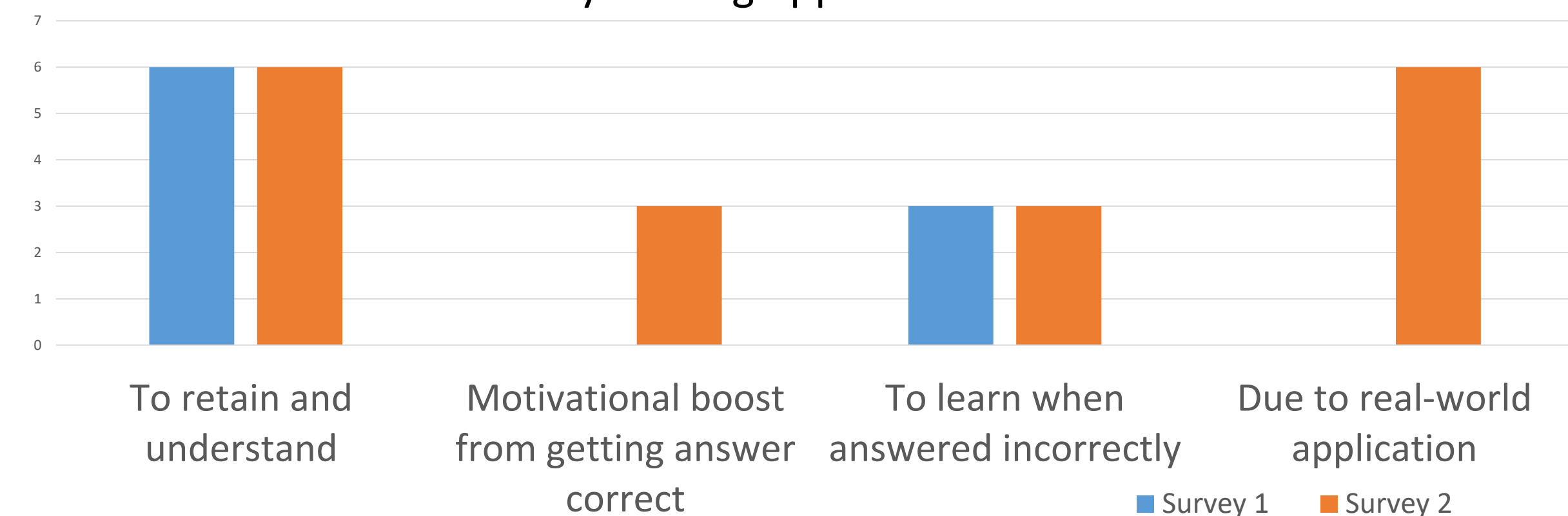
Figure 7: Survey responses on benefits of clicker-use for motivation

The greatest increase in engagement and motivation was experienced when case-based questions required students to actively find answers and apply theoretical information to a veterinary context, highlighting the critical role that pedagogical design of classes has in delivering optimal learner benefits. Group activities were found to promote peer-learning and increase engagement and motivation for most participants.

References:
Hunsu, N. J., Adesope, O. and Bayly, D. J. (2016) 'A meta-analysis of the effects of audience response systems (clicker-based technologies) on cognition and affect', *Computers and Education*, 94(3), 102–119, available: doi: 10.1016/j.compedu.2015.11.013.
McNiff, J. (2002) 'Action Research for Professional Development', AR Booklet, [online], available: http://www.jeanmcniff.com/ar-booklet.asp [accessed 23/09/17].