Use of Audience Response Systems in the HE Teaching and Learning Context

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INTRODUCTION

Overview: This study explores the use of Audience Response System (ARS) and the Turning Point technology in particular, to investigate how this method affects engagement, academic performance and attention of postgraduate students coming from diverse educational and cultural backgrounds.

What is ARS? "ARS permit students to answer electronically displayed multiple choice questions using a remote control device. All responses are instantly presented, in chart form, then reviewed and discussed by the instructor and the class. Responses are always anonymous to peers." (Kay R. and LeSage A. 2009)

The need for improvement:

- Module feedback for M002LON Strategy suggested that whilst students are happy with the use of case studies in seminars, they would like to experience a wider range of teaching methods.

- Low student engagement and class participation in Term 1 modules due to diverse cultural and educational background.
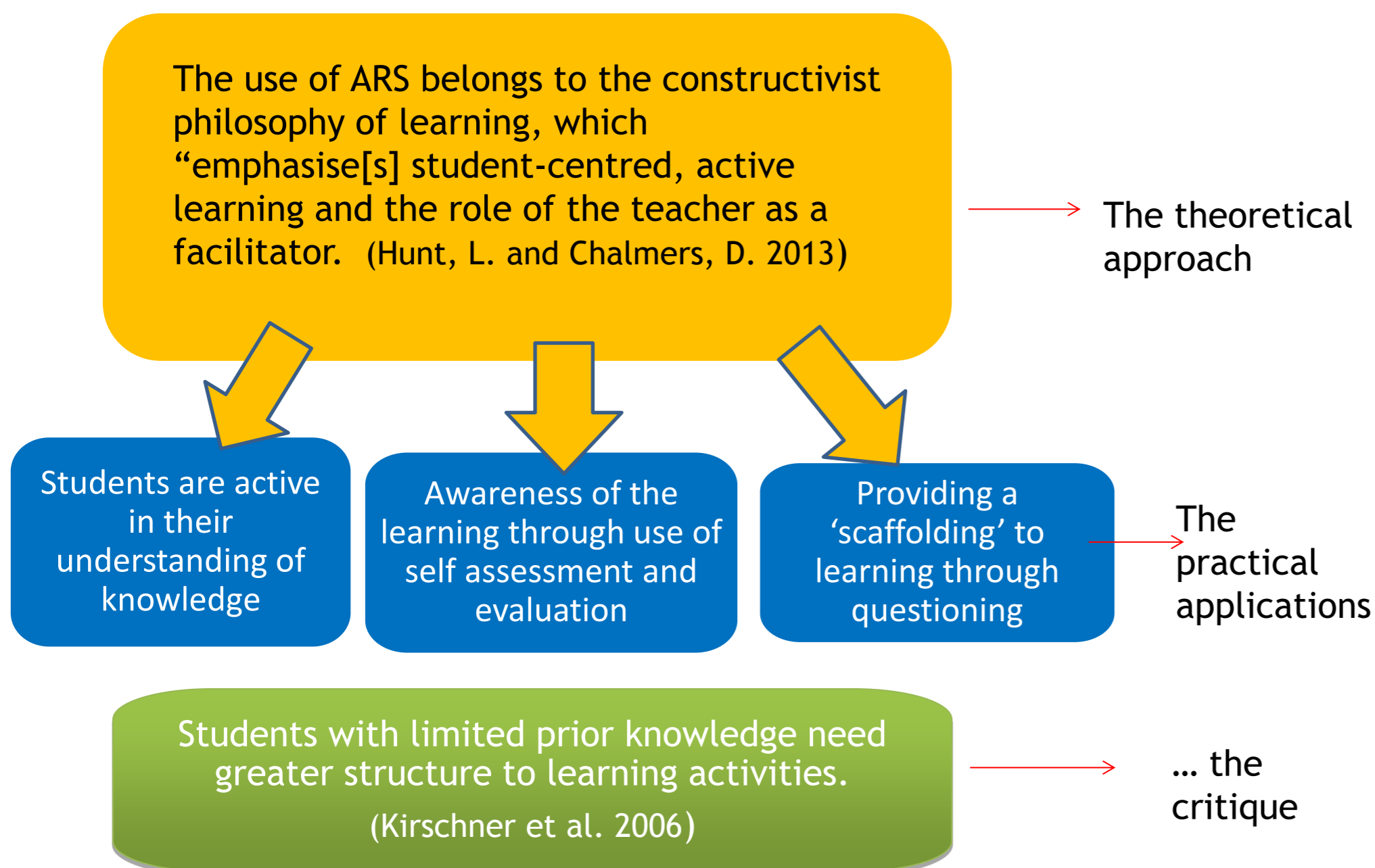
The response:

- The use of technology and the ARS in particular is becoming more common in academic settings to address the issue of low student engagement (Martyn 2007, Delialioglu 2012, Mason 2011, Sun & Rueda, 2012, Blasco-Arcas et al. 2013).
- The ARS was used in three Strategy seminar sessions to capture student attention and engage in the classroom.
- The study collected data from 20 MBA students in Term 1 of their studies at CULC through questionnaire and informal conversations.
- Teaching Observation was conducted and peer feedback was provided.

TurningPoint
PowerPoint Polling   Anywhere Polling   Self-Paced Testing

THEORY AND APPROACH

The use of ARS belongs to the constructivist philosophy of learning, which "emphasise[s] student-centred, active learning and the role of the teacher as a facilitator. (Hunt, L. and Chalmers, D. 2013) → The theoretical approach

- Students are active in their understanding of knowledge
- Awareness of the learning through use of self assessment and evaluation
- Providing a 'scaffolding' to learning through questioning

→ The practical applications

Students with limited prior knowledge need greater structure to learning activities. (Kirschner et al. 2006) → … the critique
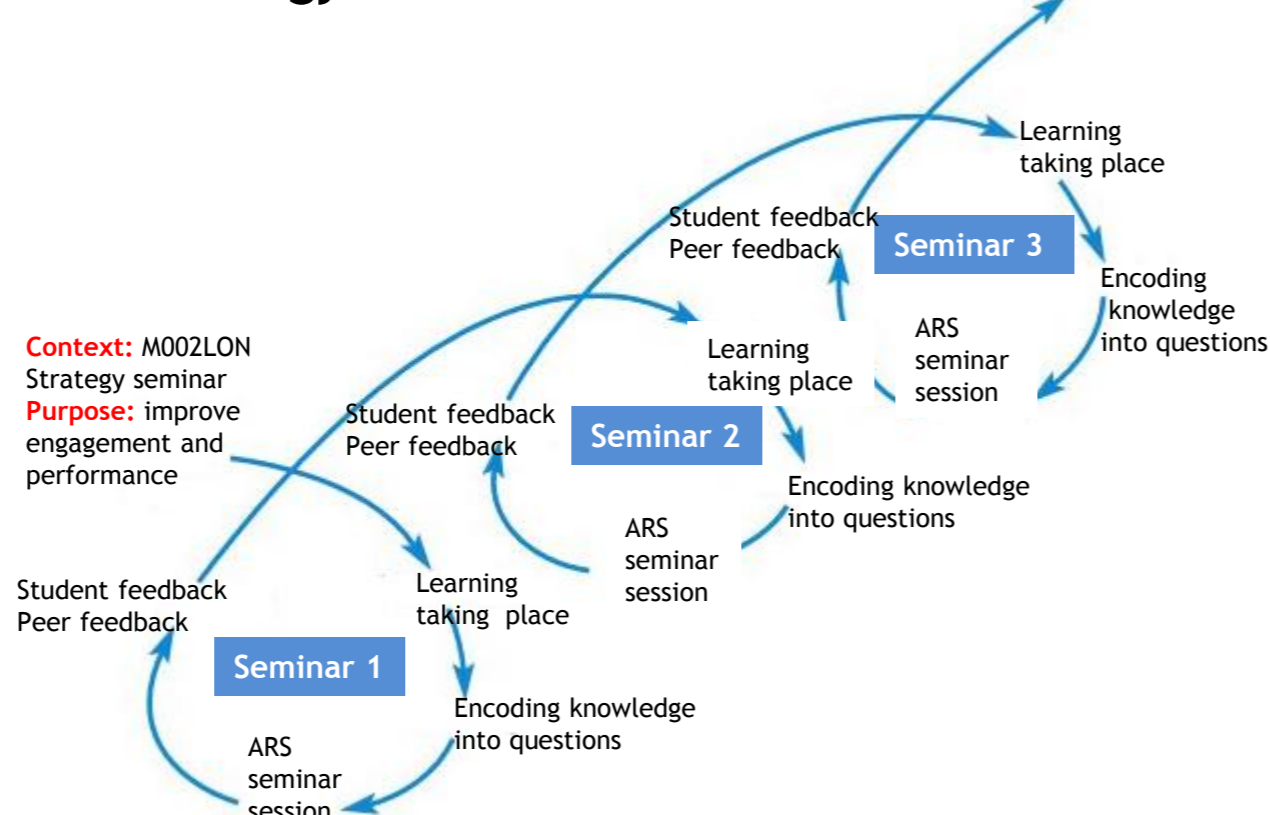
Advocates of ARS:
- ARS lead to increase in student engagement in the class activities, as opposed to the more traditional hand-raising methods (Sun, J 2014, Bode et al. 2009; Trees & Jackson, 2007).
- Key benefits for using ARSs: "improvements to the classroom environment - increases in attendance, attention levels, participation and engagement, learning (interaction, discussion, contingent teaching, quality of learning, learning performance), and assessment (feedback, formative, normative)" (Kay R. and LeSage A. 2009:819).
- Research shoes that students who frequently used clickers in class have been categorized as either high or low performers, while students who were low-frequency ARS users clustered into a range of moderate to low performance (Kennedy and Cutts 2005).

Critique of ARS:
- There is no differences in terms of learning outcomes between learners who used clickers and those who responded using more traditional methods (Stowell and Nelson 2007).
- ARS can be seen as an amusing novelty in the classroom. However, they can be used as a teaching innovation when the cognitive principles are followed. (Lantz 2010)

Methodology: Action research

Context: M002LON Strategy seminar
Purpose: improve engagement and performance

Student feedback / Peer feedback — Seminar 3 — Learning taking place — Encoding knowledge into questions — ARS seminar session
Student feedback / Peer feedback — Seminar 2 — Learning taking place — Encoding knowledge into questions — ARS seminar session
Student feedback / Peer feedback — Seminar 1 — Learning taking place — Encoding knowledge into questions — ARS seminar session

RESULTS AND FEEDBACK

- Great enthusiasm demonstrated

- 100% participation and engagement

- Students placed the ARS before other teaching approaches used in the seminars.

- Students requested the use of ARS in every session.

Satisfaction with Teaching and Learning Activities

ARS 9.5   Breaking News 5.75   Case study 8.05
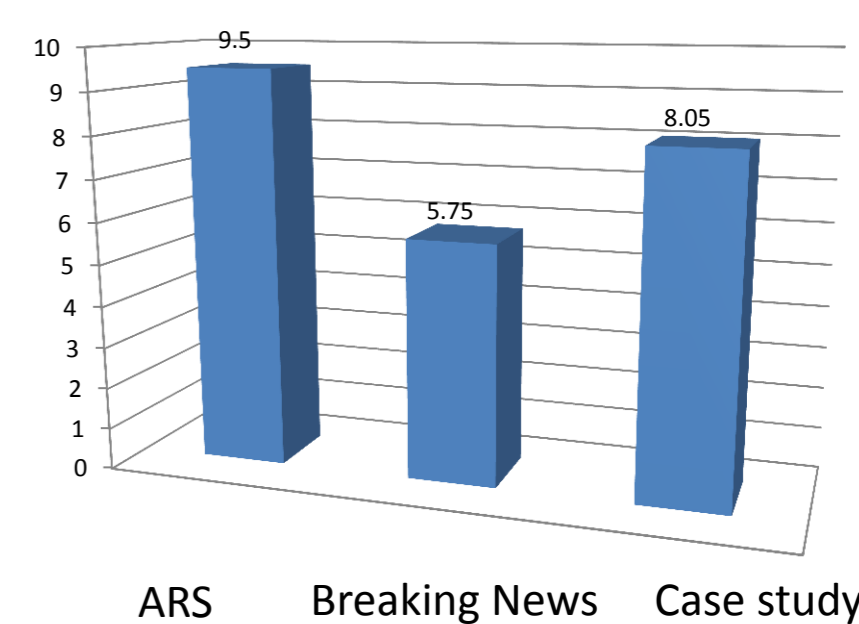
Student feedback: "Turning Point was interactive and helpful in revising material covered in the module. I want to do this again."

Student feedback: "I had the confidence to participate in the session without worrying that I have the wrong answer."

Peer feedback: "The application of the voting device and system in the class is a teaching innovation. It can practically engage all the students. It also allows the teacher to give instant feedback to the students where necessary. Most importantly, students' engagement and interaction can be measured by the number of response received."

Peer feedback : "The knowledge that is supposed to be covered in this unit has been encoded into different questions. Every single student was engaged in the discussion because of the use of the technology ('voting device') and the teacher's ability to motivate them. Students managed to achieve a clear picture of what they need to know, what they are capable of doing and what they need to improve."

CONCLUSIONS and FUTURE WORK
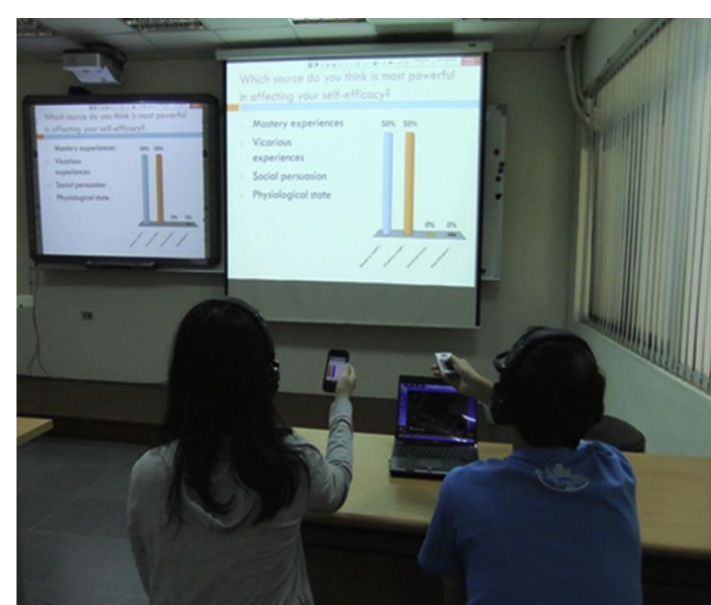
BCG determines the attractiveness and balance of the portfolio based on:
1. Market share and market growth criteria
3. Strategic fit
2. Strategic competencies and company culture

53%   16%   32%
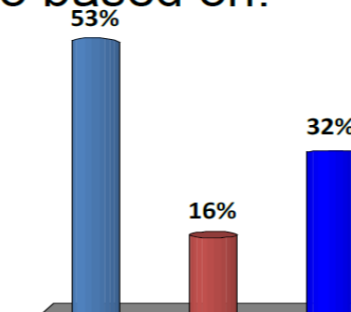
Conclusions
The results showed that the use of ARS in seminars:

- improved student performance and increased students' engagement;

- provided a direct way for the tutor to check that learning is taking place and provide instantaneous feedback;

- was most effective in combination with other seminar activities (case studies and Breaking News sessions);

- could be challenging due to technical issues;

- should be further explored and tested.

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