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**Title** 'If you pass the baton to them, they will take more care of it': Some reflections on safely transferring learning control to degree students to improve the student learning experience.  
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## SRHE Paper for 2017 Conference

Higher Education rising to the challenge: Balancing expectations of students, society and stakeholders

*Anticipated Conference Research Domain: Learning, teaching and assessment (LTA)*

Title: 'If you pass the baton to them, they will take more care of it': Some reflections on safely transferring learning control to degree students to improve the student learning experience.

### **Abstract**

This ongoing study aims to investigate the benefits associated with an understanding of '*loci of control*' in the teaching of university computing undergraduates (level five students). The concept of '*loci of control*' within the studied context is discussed and the guided transfer of elements of teaching control to students is assessed through a series of topic tests along with the effects on subsequent student learning. Ensuing student focus-group panels examine perceived student learning development in more detail. Initial data analysis indicates that transferring delivery of topic elements to student control develops features of deeper learning in some students. The medium term effect on learning of this experience is reported in a positive manner by a number of students. This 'flipped-informal classroom' approach is resulting in a more engaged student learning atmosphere. The study continues with the hope that progress results in the development of a 'student learning engagement index'.

**Keywords:** loci of control, flipped classroom, informal teaching, student learning engagement index

### **1. Introduction**

Perhaps more than in any other educational sector the higher education environment expects students to accelerate their journey to becoming autonomous learners. Whilst it is not argued here that this does not occur in other areas of education, rather it is that the modern university environment sees a strong adherence to individual students gaining the ability to control their own learning more overtly. This leads us to the notion of '*loci of control*', whereas traditionally it has been the 'locus of control' in the teaching and learning situation that has been investigated (Rotter, 1954, D. M.A. Fazey & J.A. Fazey, 2001). This study sees in current university environments there are

numerous areas of control and it is this dynamic and complex context that needs to be further understood, especially so with the nascent development of 'learning technologies'. This will enable educators to focus their time and efforts, and university management to concentrate their resources and finances, into more effective and efficient learning situations to enhance the student learning experience.

## **2. Methodology**

### *2.1 Model development*

The stance taken in this research is the notion that the 'advanced' learner needs to develop cognisant, autonomous 'teaching' capabilities. Now whilst some might argue that this is relinquishing too much control to learners away from tutors, facilitators, teachers and lecturers it needs to be seen from the perspective that this is one aspect of the many facets of the student learning journey. The specific example here is seeing that students are given the safe opportunity to develop confidence and skills in their own self-teaching ability. The current work is part of a series of research projects to evaluate and develop education environments ('flipped' (Bishop, J. B. & Verleger, M. A., 2013)/'informal' (Boud, D. & Middleton H., 2003)) for teaching core technical skills and collaborative practices required by the computing industry.

The framework adopted here is a consideration of the Learner, Educational-technology and the 'Learning Design'. The value of the teacher is in no way being dismissed or diminished here and is accounted for in the Learning Design. However, the focus is on the teaching role rather than the teacher themselves.

The direction for the research is the introduction of a 'double flip' where the students take a more prominent role in the group dissemination of underpinning knowledge, and the lecturer takes more of a mentor role. This 'double flip' could be integrated with a Team Based Learning (TBL) paradigm for the delivery group (Michaelsen, L. et. al., 2004).

Within the intervention's 'modus operandi' it is important to remember that the students' presentations, delivery and data capture are all carried out in a normal lab environment with the recording technology used being as transparent as possible to afford the students a safe and relaxed atmosphere.

### *2.2 Data Analysis*

The quantifiable data analysis being undertaken uses multivariate data analysis with constrained ordination (e.g. CANOCO 5 software Braak & Šmilauer, 2012). The qualitative data analysis undertaken uses rich-dataset analysis (e.g. NVivo software Bryman, A., 2015).

### *2.3 Implementation*

The study has involved two cohorts of university computing students to date and a third computing cohort along with a cohort of university psychology students is planned for 2017-2018. Participants are level five Mobile Computing students with three teaching groups taken from B.Sc.(Hon) and FDSci programmes. Students were divided into small collaborative groups/teams or pairs to research a topic which can be negotiated from a range of topics for 'fresh' delivery to peers. Tutor support is available. However, to date very little support has been requested. Group sizes denote some topics might require more than one group presentation; each delivery approach is unique to each sub-group. Question and answer sessions follow each presentation where any concerns from students or tutors regarding the accuracy of subject matter delivered are addressed. The presentations are video recorded using a Swivl System. The following session includes a test based on the previous material. The research is investigating the effect on the quiz scores of those students who delivered the material as compared to those students who received the material. Any residual effects of improvements in learning shown by the results of the subsequent tests will also be examined e.g. '*inter*' and the '*intra*' analysis. Ensuing student focus groups are arranged to ascertain and investigate any meta-cognitive learning attributes and capabilities that students feel they have gained from undergoing this intervention. These focus groups and interviews are again video recorded using a Swivl System\*. The use of digital technologies by the students, both in gathering and presenting their topics, is also discussed in the context of student, and possibly staff, collaboration while undertaking their tasks.

### 3. Discussion and Further Research

#### 3.1 Observations

Whilst full quantitative and qualitative analysis of data collected to date is ongoing, initial data review indicates that a significant number of students who present topics obtain a deeper learning of those topics as suggested by their scores. Suggestions are that students' perception of their own learning capabilities are positive thereafter. An aim of this research is to progress towards the establishment of an underpinned learning index metric for such teaching paradigms. This will provide justified evidence, so that educators and the management of education have more confidence in adopting nascent teaching and learning contexts and environments in the future, thereby enriching the student gestalt learning experience.

On initial analysis of the captured data, early indications suggest that, qualitatively, the students are engaging to a greater degree with the programme subject matter, and value the flipped collaborative environment with initial findings indicating students reporting a perceived improvement in learning. E.g.: 'helped to better understand'; '*gained ... independent learning*'; 'no need to revise ... *in depth ... because knowledge was better understood*' (researchers italics); 'the quality of your work was improved'. However, final qualitative and quantitative evaluations/data have yet to be finalised.

#### 3.2 Next Steps

The effects of a '**flipped classroom**' approach coupled with the blending of '**informal learning**' characteristics into a formal instructional setting will be further investigated to consider the value of a 'double flip approach' to acquire a better fit with the research aim. It is envisaged that this will take place within a stronger Team Based Learning\* approach once greater insight has been gained into team-based Learning (TBL) and its contribution to technology-enhanced learning in a professional

manner. This approach will provide a more focused paradigm of the research's educational intervention and the corresponding learner strategies ('personalised learning frameworks', Miliband, 2006), which hopefully will lead to an improvement in the students' topic knowledge, understanding and application along with an awareness of the benefits of collaborative working, more suited to their future employment environment.

The key component of student engagement and its relation to this research remains consistent. It is anticipated that this will contribute to the development of a '*student learning engagement index*'.

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### **\*Web Sources**

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Swivl Technology: <https://www.swivl.com/>