Motivating All Our Students?

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ABSTRACT

The working group proposal outlined here is a research study which addresses the course related area of classroom management.

The aim of this working group is to continue previous work which explores the ways in which academics around the world enthuse their high achieving students, and to create a repository of effective ideas. This includes determining the scope and usage of differentiated teaching techniques in educational institutions worldwide; the educational soundness of the techniques used, and the impact of these techniques on areas including student achievement, plagiarism, and staff workloads.

Categories and Subject Descriptors

K.3.2.3 [**Computer and Information Science Education**]: Computer Science Education

General Terms

Human Factors

Keywords

Motivation, learning, fun.

1. INTRODUCTION

We propose a working group to continue the work of the 2010 ITiCSE working group "Motivating Our Top Students" [4]. Last year we investigated the ways in which instructors attempt to enthuse the entire cohort: both the strugglers and those at the other extreme. We also investigated competition as a motivational tool for engaging high achieving students [10]. The initial intention last year was to create a repository of resources, but as issues emerged from the data collection it became apparent that the scope of the project was greater than originally anticipated.

The issues which emerged include whether or not we should verify that self-selected top students actually know what they claim to know [11]; there appear to be academic / ethical arguments for both verifying their understanding and letting them drift and fail if they are misguided – not something cash strapped institutions which face fines for high drop-out rates can afford to try.

We hope this year to continue the work and explore the arguments further.

1.1 Background

The 2010 working group conducted an international survey of academic practices and completed a large-scale literature review (amassing over 150 relevant references). In reviewing the literature and conducting the survey we identified and attempted to inter-relate a broad body of work which spans teaching methods, student motivations, curriculum design and some aspects of educational theory [3, 8, 14].

The aim for this year is to further explore the educational arguments for and against some common themes that emerged in 2010. We will identify the major themes and conduct in-depth interviews with practitioners who epitomize these themes. This will allow us to identify and classify good practice and ideas, so that a repository can be created. We wish to further develop understanding and good practice in this important area.

2. WHAT WE INTEND TO DO

The major stages involved in addressing the aims of the proposal are outlined here. We need to detail what is actually current practice, locate it within educational theory, and create a dissemination mechanism. We will base our work around the themes that emerged from the 2010 survey:

- Streamed teaching [2, 6]
- Meeting student expectations [7]
- Research experiences [1, 9, 12]
- Maximizing individual potential [5]
- Interdisciplinary connections [13]

2.1 Prior to Conference

We will begin by creating a structure for comparable interviews to be conducted by all working group participants prior to the 2011 conference. We will then interview academics who set the work and manage the classroom experiences. The 2010 working group survey asked individuals who were willing to be interviewed for follow-up work to provide personal details; whilst these people will remain anonymous the interviewees will be those who

volunteered. We will begin individual analyses of the interview data and link this with the literature already identified.

2.2 At the Conference

Once at the conference we will compare results seeking common issues, problems and themes; these will form the basis of the discussion section of the report. Participants will be expected to be familiar with the themes emerging from their own data-gathering by this stage.

Items for inclusion in the repository will also emerge from the data-gathering phase and we will begin to formulate an appropriate categorization system and format for the repository at this stage.

3. PROPOSED OUTPUT

It is important to be conscious of the fact that the evidence we fill gather is the product of individual or institutional compromises which must balance workload represented by staff student ratios and individual teaching commitments.

3.1 Artifact

The major output will be a repository of, and guidelines for the use of, materials to stretch and motivate the students who find the work easy, whilst not demotivating those who struggle with basic concepts.

Appropriate links to currently available materials and sources will be provided. Visitors to the website will be encouraged to suggest examples of good or bad practice that they have encountered within the classroom to add to the current body of knowledge. It is envisaged that the website will eventually become a first port of call for any CS academic wishing to improve, alter or adopt practices aimed at motivating the top students.

3.2 Report

The analysis of the interview data, along with the principles suggested for good practice, and a rationale for the repository and its particular format will be presented within the working group report that will be produced at the conference. The report will also contain discussion of the emergent issues to consider, such as verification of student ability levels as mentioned in section 1.

4. SUGGESTED PARTICIPANTS

The following people (in alphabetical order) are suggested as possible members of the working group:

- Janet Carter, UK
- Karen Fraser, NI
- Stanislav Kurkovsky, USA
- Colette McCreesh, NI
- Roger McDermott, Scotland
- Malcolm Wieck, NZ
- Su White, UK

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