

CONTRIBUTION TO SYMPOSIUM ON:

Individual Paper under the theme 'New technologies for Supporting networked /e-Learning or 'The e-University'.

TITLE OF PAPER: Electronic Submission and Content Checking: The system requirements for automatically detecting plagiarism.

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PROPOSAL: Abstract

"I found your speech to be good and original. However, the part that was original was not good. And the part that was good was not original."

Samuel Johnson

Our work is set in the broad context of electronic submission and content checking, however our primary concern is its systematic application to the electronic detection and classification of plagiarism and the assessment process in the e-university. The system provides the means for students to submit their work electronically and for the automatic checking for plagiarism to be conducted prior to delivery to the assessment system. Developed as a modular extensible system it is under continuing development. The paper provides an introduction to the problem and prior research in the area in the first two sections. The third section is concerned with our approach to the system design. The next two sections provide details of the submission and plagiarism checking subsystems. We conclude with initial results for particular test scenarios.

The recognition that plagiarism has taken place has long been a problem. This is of great concern when the work is submitted through the web and originates from globally distributed students in an e-university environment. Our work concerns the electronic means to detect plagiarism, whether accidental or deliberate, and provide indicators as to its extent and severity. Our primary focus is to provide a web based tool for our e-university environment that will address the need to detect plagiarism in work submitted electronically by students. It is evidently extensible to individual use for those afraid of accidental plagiarism.

In order to do this we needed to provide a sequence of checks that will assess the work submitted against criteria specifically chosen to aid detection of similarities to other work. The checks do not explicitly state deliberate plagiarism has taken place but rather they provide various measures which when appropriately analysed lead

to reasonable conclusions. It is a requirement that the checks are considered appropriate to the topic at hand. A check for similarity will not help in a mathematics test where calculation and formal style are required. (We would find against those with the correct answers).

We have chosen to base checks upon; Style, Use of Language, Spelling, Common Errors and Similarity. The e-university and its global nature create further difficulties in these areas.

The reporting system requirements need tailoring to the specific needs of the body using the system, e.g. Are we merely wishing to eliminate duplication of submissions or are we considering a formal enquiry? We can recognise the need for some common components; discovery of perpetrator, assessment of student knowledge of the work presented, and relevant original sources. It must be remembered that reports are indicators and require confirmation.

The system requirements in terms of; hardware, software, submittal, receipts and commented returns across the WWW are particularly severe. These are compounded by the need for security, authentication, data protection compliance and a shadowed system for disaster recovery.