

PREVENTIVE STRATEGIES ON CHEATING AMONG INTERNATIONAL COMPUTER SCIENCE STUDENTS *

FACULTY POSTER ABSTRACT

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Nowadays Rivier University experiences the exponential growth of international students (mostly from India) in M.S./Computer Science and M.S./Computer Information Systems programs. For the last 7 years, the number of students was grown by the factor of 12, and 436 degrees were conferred. The most significant increase of students in these programs took place in spring 2014 when the first large cohort of 48 international students arrived on campus (currently, we have 535 students), who brought new challenges mostly associated with the cultural and educational-system differences, such as weak academic background; weak code-programming and communication skills; ineffective study skills; numerous cases of cheating and plagiarizing (practically undetected among our “traditional” local graduate students); and attempts to avoid challenges in research studies by searching the existing patterns of the problem solving.

To prevent transfer-out cases, the University administration and faculty work hard with students, who are currently on probation (38 students after Spring-2016 semester) or on the Academic Honesty Violation List (92 cases in AY2015-2016). The large number of students' misconducts (cases of plagiarism and cheating) indicates the low level of students' attitudes to professional studies. Many instructors have tried to understand this phenomenon and to find the ways of preventing the students from these misconducts.

The cheating is actually a part of the social culture in some Oriental counties, particularly in India [1]. Among other stories, the article from The Telegraph [1] describes the fact that “... in the western state of Gujarat, [India] authorities ... blocked mobile-phone and Internet services in a string of cities and towns where entrance exams were taking place for public service jobs, to stamp out cheating”.

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The other article [2] describes that “... students at a medical college in Thailand were caught using spy cameras linked to smartwatches to cheat during exams. They used wireless spycams in eyeglasses to capture exam questions, transmit them to associates elsewhere and receive responses through linked smartwatches...”

The technological aspects of cheating become more and more pronounced. The Reuters article [3] reports that “... the University of Iowa suspects at least 30 Chinese students of having used ringers to take their exams. The case offers a look inside a thriving underground economy of cheating services aimed at the hundreds of thousands of Chinese kids applying to and attending foreign colleges”.

In discussions on the nature of cheating and plagiarism, some people present the argument: “the students do not really understand plagiarism and the Western demand for academic integrity”. We have found that this statement is false. A number of our students (those who work hard on their assignments) have made it clear that some of their peers are simply trying to get “the grade they want” with as little efforts as possible. The cheaters have full understanding of what they are doing.

To improve preparedness of students from India for M.S./Computer Science program, CS faculty developed a new core introductory course, “Computer Science Fundamentals”. The course includes various topics on Java Programming Fundamentals, Data Structures, Introduction to Algorithms, and Computer Organization. All individual assignments are unique and have no prototypes on the Internet. Instructors encourage students to rely on their own self-esteem and avoid any forms of plagiarism and cheating.

Instructors in the “Object-Oriented System Analysis & Design” core course start using a modified approach towards teaching the course concepts by utilizing Cloud-based UML drawing tools - Lucidchart™ and Cacao™ - rather than on-premise tools like ArgoUML™ and Visual Paradigm™. The rationale for such a move was to give greater line-of-sight visibility into the progression of students' work on team projects, and to reduce the amount of cheating/copying that had been prevalent in earlier editions of the course. Student teams were required to share their Cloud workspaces with the instructor, so he/she was able to see the progression of their work. There was “no magic” - students knew that elements from other tools or students' previous submissions could not be inserted into their diagrams. Further, the checkpoint reviews allowed the instructor to give direct feedback to each project team every week so that they could focus on understanding the reasons of their mistakes. Finally, the checkpoint reviews gave the instructor insight into topics that he/she needed to review a second time for the class.

The similar approach was used by other instructors in developing new types of lab and project assignments that motivate students to work creatively and avoid cheating and plagiarism. For example, unique code samples were offered by the instructor for the complexity code analyses in his “Software Quality Assurance” course [4]; and non-traditional capstone project topics have been offered by instructors to students in the “Professional Seminar in CS” course. The number of misconduct cases dropped by the factor of 8-12 in all these courses.

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