

Digital Academic Dishonesty

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Introduction

The following documentation is part of an in-progress research paper on digital academic dishonesty (cheating). The paper is a combination empirical-research and literature-review project. The empirical research is currently underway at the University of Tampa. A pretest of the instrument for clarity and initial response evaluation occurred during June and July of 2002. The complete survey will occur beginning in September 2002.

The documentation that follows includes an outline of the project in its current form, a copy of the survey submitted to faculty, a copy of the survey submitted to students, and an incomplete very rough draft of the paper. The conclusions discussed in the draft are based on the pretest survey results (about 100 respondents) and are subject to change upon completion of the survey of the entire university community.

The discussion of prevention methods is incomplete and will include an evaluation of classroom management software currently in progress at The University of Tampa. Additionally, the paper will be formatted to comply with APA.

If there are any questions, please contact me at your convenience.

Thank you,

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Digital Academic Dishonesty Outline

Introduction

1. Edinburgh example
2. Northeastern example

Cheating during computer-based testing

1. Digital Cheating During In-class Testing

- A. Accessing other websites during online testing.
 1. Using Web-based email services (i.e. Hotmail)
 2. Using Web-based question and answer services (i.e. Ask Jeeves)
 3. Posting test study guide to web and using during test
 4. Posting crib sheet to Blackboard digital drop box
 5. Blackboard email between students during online testing
- B. Instant messenger/winpopup.exe communications during online testing
- C. Seeding test computer with answers/formula/crib sheets
- D. Bring in floppy/zip disk containing test answers, formulas, or crib sheets

2. Digital Cheating During Out-of-class Testing

- A. group collaboration on quiz (students in same room working together)
- B. group collaboration on quiz (one student takes quiz and emails questions to other students)

Plagiarism of term papers and homework assignments

1. downloading term paper from web
2. copy / paste text from source into paper without paraphrasing and/or citing
3. using ask jeeves for answers to homework assignments

Appendix

Survey questionnaire

Survey results

Digital Academic Dishonesty Questionnaire (Faculty)

The following brief questionnaire examines digital academic dishonesty by students. Digital academic dishonesty includes academic dishonesty during online or computer-based testing, using computer/internet technologies to facilitate plagiarism, or digitally sharing homework assignments with other students. Survey results will be used by the College of Business Technology Committee in its development of technological and pedagogical recommendations to curb digital academic dishonesty on campus. Thank you in advance for completing the questionnaire.

1. Have you taught any classes in classrooms equipped with computers for students?
Yes No

2. Have you used Blackboard's online testing procedures in any of your courses? (circle one) Yes No

If yes: How often? _____

Which courses?

Which exams (midterm, final, weekly, quizzes, etc.)?

3. Have you used other computer-based testing in any of your courses?(circle one) Yes No

If yes: How often? _____

Which courses?

Which exams (midterm, final, weekly, quizzes, etc.)?

used _____

If you answered yes to either question two or three, please continue. Otherwise please skip to question 8.

4. Did you give a test or quiz using Blackboard, other computer-based testing, or both?
(circle one) Blackboard Computer-based testing Both

5. During this testing did you discover or observe any instances of academic dishonesty using computers?
(circle one) Yes No

If yes: How many instances? _____

Please describe in detail the method(s) of academic dishonesty used in each instance.

Attach additional pages whenever more space is necessary.

6. Have you established any new testing procedures or rules to prevent digital academic dishonesty?

(circle one) Yes No

If yes: Please describe the procedure or rules established.

over

7. Have you observed any instances of plagiarism in which a student used computer or internet technologies to purchase or copy a term paper in whole or part? (circle one)

Yes No

If yes: How many instances? _____

Please describe in detail the method(s) of plagiarism used in each instance.

8. Have you observed any instances in which a student used computer or internet technologies for unauthorized collaboration on or sharing homework? (circle one)

Yes No

If yes: How many instances? _____

Please describe in detail the method(s) of plagiarism used in each instance.

9. Has anyone discussed instances of digital academic dishonesty with you that you did not personally witness?(circle one) Yes No

If yes: How many instances? _____

Please describe in detail the method(s) of academic dishonesty used in each instance.

Please add any additional comments or information regarding digital academic dishonesty.

Thank you for completing this questionnaire. Please return to the addressee below. Survey results will be posted to the web at [http://utweb.utampa.edu/faculty/rbaker/digitalacademic dishonesty](http://utweb.utampa.edu/faculty/rbaker/digitalacademic%20dishonesty).

**Return to:
The University of Tampa
Box 20F**

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Digital Academic Dishonesty Questionnaire (Student)

The following brief questionnaire examines digital academic dishonesty by students. Digital academic dishonesty includes academic dishonesty during online or computer-based testing, using computer/internet technologies to facilitate plagiarism, or digitally sharing homework assignments with other students. Survey results will be used by the College of Business Technology Committee in its development of technological and pedagogical recommendations to curb digital academic dishonesty on campus. Thank you in advance for completing the questionnaire.

1. Have you taken any classes in classrooms equipped with computers for students?
Yes No

2. Have you used Blackboard's online testing procedures in any of your courses? (circle one) Yes No

If yes: How often? _____

Which courses?

Which exams (midterm, final, weekly, quizzes, etc.)?

3. Have you used other computer-based testing in any of your courses?(circle one) Yes No

If yes: How often? _____

Which courses?

Which exams (midterm, final, weekly, quizzes, etc.)?

used _____

If you answered yes to either question two or three, please continue. Otherwise please skip to question 8.

4. Did you take a test or quiz using Blackboard, other computer-based testing, or both?
(circle one) Blackboard Computer-based testing Both

5. During this testing did you discover or observe any instances of academic dishonesty using computers?
(circle one) Yes No

If yes: How many instances? _____

Please describe in detail the method(s) of academic dishonesty used in each instance.

Attach additional pages whenever more space is necessary.

6. Have your teachers established any new procedures or rules to prevent digital academic dishonesty?

(circle one) Yes No

If yes: Please describe the procedure or rules established.

over

8. Have you observed any instances of plagiarism in which a student used computer or internet technologies to purchase or copy a term paper in whole or part? (circle one)

Yes No

If yes: How many instances? _____

Please describe in detail the method(s) of plagiarism used in each instance.

8. Have you observed any instances in which a student used computer or internet technologies for unauthorized collaboration on or sharing homework? (circle one)

Yes No

If yes: How many instances? _____

Please describe in detail the method(s) of plagiarism used in each instance.

10. Has anyone discussed instances of digital academic dishonesty with you that you did not personally witness?(circle one) Yes No

If yes: How many instances? _____

Please describe in detail the method(s) of academic dishonesty used in each instance.

Please add any additional comments or information regarding digital academic dishonesty.

Thank you for completing this questionnaire. Please return to the addressee below. Survey results will be posted to the web at [http://utweb.utampa.edu/faculty/rbaker/digitalacademic dishonesty](http://utweb.utampa.edu/faculty/rbaker/digitalacademic%20dishonesty).

**Return to:
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Digital Academic Dishonesty (draft based on pretest survey)

Cheating, a continual dilemma on university campuses, has reached epidemic proportions in recent times. In 1990 the American Council on Higher Education reported that cheating was increasing and that the trend was expected to continue (Nowell, 1997). Studies throughout the 1990s confirmed this trend, revealing that up to 75 percent of college students had cheated sometime during their college careers, many on a regular basis (Koch, 2000). The rapid growth of computer technologies and their application in education has provided unethical students with new tools for their cheating activities. In 1999 117 freshman students at the University of Edinburgh were implicated in the largest computer cheating investigation in the United Kingdom. The students were discovered to have used email to exchange test answers during an examination. By using plagiarism-detection software and examining internal email records, university officials verified students had transmitted answers to each other (Wilson, 1999). Northeastern University in Boston recently experienced an incident where 30 engineering students copied computer-based homework assignments from each other. The students were required to complete assignments on assigned computers for an Engineering Physics course. One student would complete the assignment and verify its accuracy. Subsequent students would simply copy the previous students work into their own file. "Essentially, the 30 accused cheaters had identical questions, answers, and scores" (Hayward, 2000) which had been obtained by exchanging computer files.

Although incidents like these are not commonplace, digital cheating is a growing problem throughout academia. A survey of faculty and students at The University of Tampa was conducted during the fall term of 2002 (see Digital Cheating Questionnaire in Appendix). The purpose of the survey was to ascertain the extent of digital cheating at the university and what digital-cheating techniques were used by students at the university. This paper discusses those techniques, some pedagogical and technological prevention methods, and detection methods. Two venues are addressed:

- Cheating during computer-based testing
- Plagiarism of term papers and homework assignments.

Digital Cheating During Testing (in class)

The advent of web-based services like Blackboard and WebCt has provided educators with tools to apply online computer-based testing to virtually any course. These tools permit the use of any test-question format from true/false to essay questions, automate much of the grading and posting, and provide students with immediate feedback on both individual questions and overall performance. However, computer-based testing exposes academia to cheating schemes not otherwise accessible to students. The aforementioned **survey** at The University of Tampa, which was completed following the first year of Blackboard implementation, revealed the following methods of cheating during online and other computer-based testing (see Survey Results in Appendix):

1. Accessing other websites during online testing.
2. Instant messenger/winpopup.exe communications during online testing.

3. Seeding test computer with test answers, formulas, or crib sheets.
4. Bring in floppy/zip disk containing test answers, formulas, or crib sheets.

Accessing other websites during online testing

During the online final exam for a summer course in Information Technology, two students were behaving in an unusual manner. When the professor walked to the back row to observe their computers, nothing out of the ordinary was occurring. After the exam the professor locked the classroom and returned to his office where an anonymous voice mail claimed the two students, who sat beside each other, had been using other websites and programs during the test. The professor immediately returned to the classroom and checked the Internet Explorer History Files and Windows Temporary Internet Files of both computers. The files in all folders had been deleted. Not even the Blackboard.com website used during the test was in the computers' records. The files had to be deleted after the exam, possibly in an effort to conceal use of other websites during the examination. The following day the instructor asked for a copy of the firewall computer log which records the URLs of all websites accessed by computers on campus. The log revealed that one of the students had accessed hotmail.com, msn.com, and yahoo.com over one hundred times during the two hours of the examination. The firewall log for the second student's computer only recorded accessing Blackboard.com. The conclusive evidence of the firewall log resulted in first student failing the course, being reported for an academic integrity violation and being placed on probation.

The survey respondents exposed the following means of digital cheating by students using unauthorized websites during testing:

- Using Web-based email services (i.e. Hotmail)
- Using Web-based question and answer services (i.e. Ask Jeeves)
- Posting test study guide to web and using during test
- Posting crib sheet to Blackboard digital drop box
- Blackboard email between students during online testing

Hotmail email (www.hotmail.com) and other web-based email sites allow students to communicate with each other both inside and outside the classroom where the test is being administered. The student in the above example was suspected of having an accomplice at another computer who looked up the answers to the exam questions and email back the correct answers.

Answer pages like Ask Jeeves (www.ask.com) or What Is (www.whatis.com) permit students to ask brief questions or find definitions online in real time. Students were reported to have used these websites to find definitions for answer choices in multiple choice exams and question terminology they did not understand.

Many universities provide website storage to their students. Alternatively, free website storage is available from private Internet service providers or commercial websites like geocities.com. Converting an exam study sheet to a web page and posting it to the web is relatively easy. Students can access their web page during the test and look up the answers.

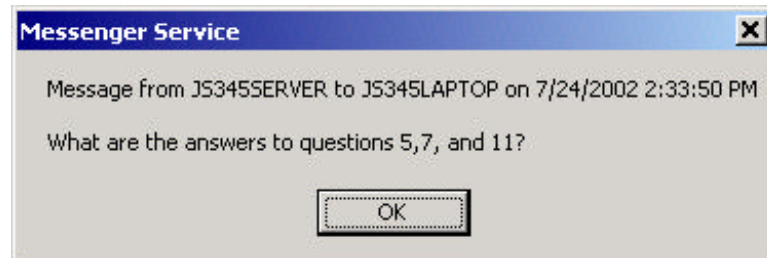
The digital drop box is a tool contained within Blackboard that allows students to post documents to the course Blackboard site. This tool is frequently used as a method of submitting assignments or as a means of sharing documents between members of a class group. The drop box has also been used to posting crib sheets to the web for use during online or computer-based testing. Students simply create the crib sheet and post it to the course drop box or to their group's drop box. During the test they simply open the file either in a text editor (Word, Notepad) and look up the answers to the test questions. This method of digital cheating differs from other website posting because it is nearly impossible to establish after the incident. The firewall log discussed previously records only the *primary domain* of websites visited by computers. Thus, the log for computers accessing the Blackboard drop box would only show the Blackboard.com domain, the same as shown for the test itself. Thus, it is impossible to differentiate which of the site's components was accessed.

However, this method of digital cheating is easily prevented by disabling the digital drop box before the test. Disabling the drop box without prior notice and immediately before students are given access to the test computers allows students to post their crib sheets and believe that it will be available to them during the test.

Blackboard email may be used by students during testing to contact other students in the test classroom for help with test questions. Blackboard email differs from Hotmail and other email systems discussed above because traceability for Blackboard email has the same limitations as the digital drop box.

However, it is also a Blackboard tool that is easily disabled prior to the examination.

Instant messenger/winpopup.exe communications during online testing.



The above Messenger Service window is an example of the net send tool that is a standard component of the Windows 2000 operating system. To use net send users needs to know the name of the computer they want to communicate with. In the example window above the computer JS345SERVER sent the message JS345LAPTOP requesting answers to questions. To use net send open the DOS window and at the C prompt (C:\>) type “net send receiving computer message” as shown in the following example:

```
C:\> net send JS345LAPTOP What are the answers to questions 5, 7, and 11?
```

Seeding test computer with answers/formula/crib sheets

On the afternoon before an evening final exam a professor walked past the classroom and saw two of his students working on computers through the window. Both students had their backs to the window and did not see the professor standing behind them. The students were using the exam study guide to seed the computer with formulas and solutions for the examination. The professor left without being noticed and returned after the students left the room to verify the students had seeded the computers. During the exam students

were assigned to computer workstations. The two students who had seeded the workstations were assigned the computers nearest the instructor. Both students failed the examination.

Bring in floppy/zip disk containing test answers, formulas, or crib sheets.

While obvious and self explanatory, this method of digital cheating merits mentioning anyway. Because of their small size, either a floppy disk or zip disk is easily slipped into a pocket and smuggled into the classroom. The student

During Quizzes/Testing (out of class)

1. group collaboration on quiz (students in same room working together)
2. group collaboration on quiz (one student takes quiz and emails questions to other students)

Term Paper and Homework Plagiarism

4. downloading term paper from web
plagiarism.org finds checks papers against databases for copying (Logan, 2000).
5. copy / paste text from source into paper without paraphrasing and/or citing
6. using ask jeeves for answers to homework assignments

Prevention Methods

Testing

Detailed instructions defining cheating, prohibiting bringing anything into classroom, using other web sites, using other files, using email, etc. based on responses from faculty survey.

MBWA – Management by Walking Around as an in-class prevention, pros and cons.

Disabling blackboard email and drop box during testing.

Limit test time

Classroom management software / network

Remove net send

Term Paper Plagiarism

Detailed instructions defining plagiarism and penalties

Assign topics

Require working copies of sources to be submitted

Require strict compliance with APA

Interception Methods

Firewall log

Email server log