

Causes for Cheating: Unclear Expectations in the Classroom

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Abstract

A survey was submitted to faculty, teaching assistants, and students as part of a larger study on undergraduate cheating in an introduction to computing course at Georgia Tech. This course was chosen because it is taught by a variety of professors and relies heavily on teaching assistants. The goal of this survey was to emulate earlier work done at M.I.T. and determine whether these groups held similar beliefs about what actions constitute cheating. The survey presented scenarios and asked the respondent to rank these scenarios as “not cheating”, “trivial cheating”, or “serious cheating”. Each respondent was involved with the course, either as a student, teaching assistant, instructor, or administrator. The results showed that the first difficulty in studying cheating is defining it. Not only were there wide discrepancies between the three groups, there was also wide deviation within the groups. The members of the administration agreed on only one of the nine scenarios. Students and teaching assistants were generally closer in their responses, but still differed considerably. One limitation of this study was the limited response pool: only four administrators were involved in the course. Nonetheless, the significance of the deviations demonstrates the three groups are not successfully communicating their beliefs. The results further indicate a need for clear leadership in the definition of which actions and behaviors constitute cheating.

I. Introduction

As Information Technology pervades all workplaces and disciplines the increasing demand for professionals, particularly in engineering, who are proficient at computer programming has necessitated introductory programming courses for many students of higher education. To meet this need Georgia Institute of Technology’s College of Computing has developed an Introduction to Computing course. This course, formerly CS1501, is now required for all students, from those majoring in International Affairs to first-year Computer Science majors. The resulting situation has created many challenges: students bring widely different levels of programming and computer experience to the course, large numbers of students must be accommodated, and the students are from a variety of majors which may or may not emphasize the importance of the course. Each of these aspects makes developing and delivering the curricula for CS1501 difficult.

When compared to other Georgia Tech courses, the detected levels of cheating in this course are elevated. For Fall Quarter 1998, 73% (51 out of 70) of Georgia Tech cases where students were judged guilty of cheating originated in courses administered by the College of Computing. With

few exceptions, these cases came from CS1501 and the next course in the series, CS1502. These numbers drew the attention of both the Senior Associate Dean of Students Dean Karen Boyd, and the Honor Advisory Council, a student organization tasked with educating the campus about the new Academic Honor Code. Their concerns precipitated this study, a preliminary investigation of cheating in the context of an introductory computer science course.

II. Previous Research related to Cheating in Post-Secondary Education

Undergraduate cheating has long been a problem at many colleges and universities¹; three-quarters of college students confess to cheating at least once⁸. As a result, there have been several studies conducted to identify the causes of cheating and to aid in understanding the schism between the students and the professors on this topic. The information gathered by these studies generally falls into three main categories: what is considered cheating, the characteristics of universities and courses where cheating is most prevalent, and the characteristics of those doing the cheating. We will be focusing on the first two.

Although more types of cheating exist than can be enumerated and discussed here, there are certain forms that appear frequently. In “Everybody (Else) Does It: Academic Cheating”, Greene and Saxe³ summarize the most popular forms. In their study, they discovered that the most common form of cheating is collaboration on individual assignments. After this, students are most likely to use another student’s notes and/or exams for study material and, following that, another form of cheating is lying to the professor to receive an extension on an assignment. Students at MIT were asked to evaluate the seriousness of several acts of cheating. These students were asked to rank the situations as “not cheating”, “trivial cheating”, and “cheating”, instead of the obvious two, “cheating” and “not cheating”. “Trivial cheating” was defined by the students as actions that do not preclude their learning of the material. These are practices such as working together or using other people’s notes and/or exams. However, cheating on a test or paper is seen as serious cheating because you are misrepresenting your knowledge on what is considered the final judge of this knowledge⁵.

Students’ attitudes toward cheating are strongly correlated to their actions¹. Centra suggests that students may become more disapproving of cheating as they progress through college. On the other hand, Greene and Saxe quote a student as saying that cheating has become the “accepted norm” and that students believe that it is commonplace, which seems to imply that students would become more ambivalent toward cheating as they progress through college watching those around them participate in suspect behavior. Kleiner and Lord quote a junior at a state university as saying “I realize that it is wrong, but I don’t feel bad about it, either, partly because I know everyone else is doing it. If I ever stole a test or something I’d feel guilty. But just getting a couple of answers here and there doesn’t bother me.”

There are many factors that seem to affect the level of cheating at a particular university or in a particular course. Students have identified perceived unfairness as a cause of cheating, and also having a single exam determine a large portion of the final grade. The students claim that a lack of a good relationship with the professor, a professor with poor instructional skills, or an arrogant professor are also incentives to cheat³. Some people blame large class sizes and over-

burdened teachers. The author of *The Cheater's Handbook: The Naughty Student's Bible* claims “that he never cheated in any subject he really cared about or in classes with inspiring instructors.” One study reports that students are “31% more likely to cheat in courses taught by teaching assistants – graduate students or adjunct professors – than those taught by tenured or tenure-track faculty”⁸. They also point out that objective tests encourage cheating³. One professor claims to have reduced cheating in his class to practically zero by offering multiple versions of tests, adding proctors, and warning the students that cheating would be punished⁸.

According to U.S. News and World Report, some cheating may occur due to student confusion over its definition. The article quotes Sissela Bok, who wrote *Lying: Moral Choice in Public and Private Life*, as saying “people are very confused [about] what is meant by cheating.” It also quotes a senior at a boarding school on the subject of group work: “... some of my teachers say you can't do it, some say that two minds are greater than one...”.

There are also several studies that focus directly on problems of introductory computer science courses. Howard, Murphy, and Thomas⁴ assert “It has been theorized that computer anxiety in college students could impose a significant barrier to developing positive attitudes toward computers, learning about their technology, and acquiring the operational skills needed for their use.” They define computer anxiety as “fear of impending interaction with a computer that is disproportionate to the actual threat presented by the computer.” Their study focused on a course that taught both programming and introductory computer science concepts. The results indicated that approximately one-third of introductory course students began the term with seriously high levels of computer anxiety. Levels of computer anxiety were found to correlate strongly with math anxiety, computer knowledge, and computer experience. In their discussion, they conclude that not only is segregation of students desirable, but “segregation of students based on computer anxiety appears to be preferable to segregation based on other more obvious factors such as demographics or academic major.”

After recognizing that “student population in such a course has tremendous variation in background, motivation, expectations, and analytical skills”, Singhanian⁷ proposes some solutions for improving the situation. He recommends warning students against “thinking on-line”, and instead teaching them to write the programs at their desks, only testing when satisfied with the result. He also identifies several suggestions for group techniques: allowing students to read and check each other's programs, group review of a program, and other forms of team interaction. Fienup² also supports group work. He writes (in reference to his object-oriented CS-2 course), “team projects avoided overwhelming students with large projects by decreasing the amount of work that each student needed to perform, and helped to provide a “study group” for learning... Collaboration helps provide a student mentoring mechanism, [and] improve performance due to peer pressure”.

Students generally find the introductory computer science course time-intensive and stressful⁶. Sacrowitz encourages making introductory courses pass/fail, multilevel, having labs and smaller classes, and allowing collaborative learning. In support of collaborative learning, she hypothesizes, “involving the students in larger collaborative projects might give students a true picture of the work environment and also help combat the feeling of isolation reported by many

female students.” Kleiner and Lord illustrate another case. They quote Melissa, a college student as saying “We all know that cheating is cheating, and we shouldn’t do it, but there are times that you cheat because there aren’t enough hours in the day.” They then provide an example: “last month, Melissa found herself with a computer programming assignment due in a few hours – and several hours of driving to do at the same time. So she had a friend copy his program and turn it in for her.” This also exemplifies the ease of cheating in computer science courses.

There are many potential problems with these studies. Many of them depended on survey results. In the Greene and Saxe article, they admit to a low percentage of survey returns, which may have skewed the results. Surveys also depend on their recipients’ honesty. It is impossible to assess the actual truthfulness of the students and they may lie in fear of being caught. Some were limited by a small sample size⁴. The MIT report⁵ appears to be the most useful when considered in relation to the situation at Georgia Tech. The culture at MIT closely corresponds to that of Georgia Tech as both schools are focused primarily on engineering and the sciences. In addition, the MIT survey appears to have been the most comprehensive survey employed by these reports.

These articles and reports provide useful insight into the culture of different universities and the mindset of those students who cheat. While the data in these reports did not bias any surveys we employed at Georgia Tech, it did suggest several additional questions. According to these reports, undergraduate cheating is almost a universal problem. While the students who cheat have been almost exhaustively profiled, continued problems indicate that a solution to the issue of cheating has not yet been found.

III. Context

The Introduction to Computing course, CS1501, and its sequel, the Introduction to Programming course (CS1502) are unique in comparison to other courses at the Georgia Institute of Technology. Both deal with large numbers of students; over 550 were enrolled during Spring Quarter 1999, when this study was conducted. The course consists of a lecture, recitation, lab, and one-on-one meetings between the student and his/her teaching assistant (Table 1). The format, personnel, number of students, and weekly meetings differ with each element of the program.

Table 1: Structure of CS1501

Component	Personnel	Approx. Number of Students	Meetings / Week
Lecture	Instructor	300	3 x 1 hr.
Lab	2 Lab TAs	30	1 x 1.5 hr.
Recitation	2 Recitation TAs	25	1 x 2 hr.
One-on-One Meeting	1 Recitation TA	1	1 x 15 min.

The lectures are designed to be instructor-independent and uniform. This goal is accomplished by having each instructor use identical lecture slides and notes. This technique is implemented

because, despite having the same assignments and being in the same grading pool, sections may have different instructors.

Each recitation teaching assistant (TA) is assigned approximately twelve students. In recitation two TAs instruct their combined sections, answer questions, and administer weekly quizzes. Additionally, each recitation TA meets with each student in his/her section individually once a week for at least fifteen minutes. These TAs are responsible for grading the students' weekly homework and quizzes. The final aspect of the course, the lab, is a two hour period where approximately thirty students complete specific programs or projects under the instruction of two laboratory TAs (these TAs are unrelated to the recitation TAs). The majority of the TAs are undergraduates.

IV. Method

A ten scenario survey was administered to the instructors, TAs, and students. The survey was developed from scenarios used in a MIT study⁵ and from data given to us by the Dean of Students office. The scenarios developed from the latter source were designed to be specific to CS1501. Each scenario had a possibility of three rankings: "not cheating", "trivial cheating", or "serious cheating". The ranking scheme for the scenario surveys was taken from the MIT study⁵.

We surveyed instructors, TAs, and students about their conceptions of which actions constitute cheating. The instructor category consisted of 1) the course creator, who no longer actively taught the course; 2) the administrator, who oversees operation of the course due to its size and complicated logistics; and 3) the two lecturers for that quarter. The TA category consisted of the recitation and laboratory TA's responsible for the students. Finally, the student category consisted of students registered for the course during spring quarter, 1999. Each respondent was presented with the same ten scenarios and asked to rank every scenario separately as either "not cheating", "trivial cheating", or "serious cheating." An example scenario follows. (See Appendix for a complete listing of scenarios.)

You are given an example, already compiled, program (executable). Your assignment is to create a program that runs like this program. You decompile the example program and use parts of the resulting code in your assignment.

TAs were given paper surveys at a group meeting. The instructors' responses were gathered through either paper or email surveys. For the students, the survey was administered electronically through Buzzback, a program internal to the College of Computing. Buzzback is used weekly throughout the term to gather student feedback, so students are accustomed to the format and interface.

The students were also asked to freely respond to the question: "Observed reasons for cheating in this course." The Buzzback format for this question was a small text box that scrolled as the student typed, making it difficult for students to see their comments when they were finished. This format resulted in a large number of misspellings and grammatical errors but did not detract from the value of the answers.

The results were determined through a tally of responses. Based on questions received during the administration of the surveys, one scenario is ambiguous. As a result, we only consider nine of the ten scenarios in our findings.

V. Findings

Instructors

A marked lack of agreement exists between the instructors. The instructors unanimously agree on only two of the nine scenarios. If the professor has expressly forbidden an activity (scenario 10), then all of the instructors agreed it is serious cheating. On the other hand, they also agreed that examining notes and/or assignments from previous quarters (this material is known as “word”) to understand the material is not cheating (scenario 5). Their agreement on the latter scenario is unsurprising, as it is expressly permitted in the Georgia Tech Academic Honor Code.

The instructors are evenly split, however, on whether writing verbatim answers studied from word on your own quiz questions (scenario 6) constitutes cheating. When the categories of trivial and serious cheating are considered as a single cheating category, the instructors disagree on five of the nine scenarios. They are unable to agree on whether looking at another student’s code to help him/her (scenario 1), decompiling an example program and using pieces of the resulting code in your assignment (scenario 3), lying to a professor to gain a time extension (scenario 7), and repeating a TAs lesson verbatim on a quiz (scenario 9), are or are not cheating.

The instructors each rank the remaining two scenarios as cheating, but disagree on the degree. On these scenarios, 25% of the instructors said that the action was trivial cheating, while the other 75% described it as serious cheating. In the first scenario (scenario 2), one person helps another by showing him/her a piece of code. In the second (scenario 8), a student uses code from a web site listed as a reference on the syllabus, but does not explicitly reference it in their work.

TAs

The TAs did not fully agree on any scenario and were only able to agree that an action constituted cheating on one scenario (scenario 10). For another six scenarios, greater than fifty percent of the TAs believed that an action fell into one of the two cheating categories. The majority felt that one person helping another by showing him/her a piece of code (scenario 2), lying to a professor to gain a time extension (scenario 7), and repeating a TAs lesson verbatim on a quiz (scenario 9) were trivial cheating.

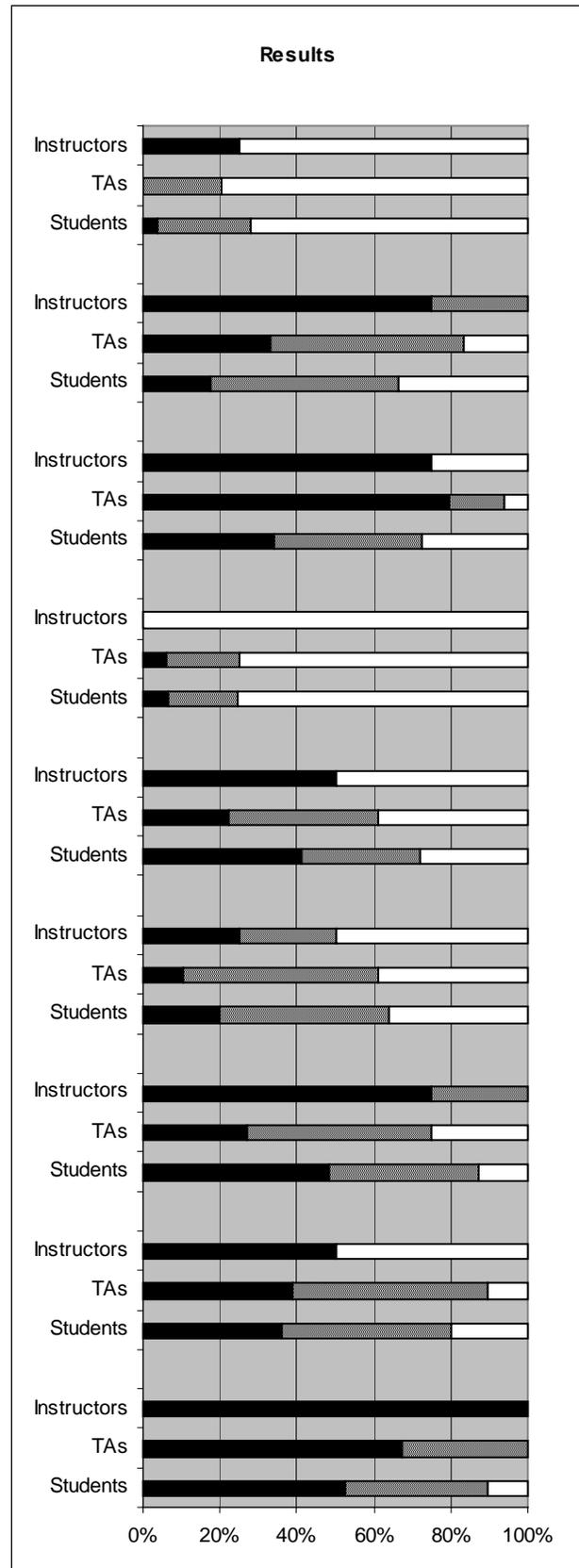
80% felt that decompiling an example program and using pieces of the resulting code in your assignment (scenario 3) constituted serious cheating.

While 48% of TAs felt that if a student uses code from a web site listed as a reference site on the syllabus but does not explicitly reference it in their work (scenario 8) constitutes trivial cheating,

Figure 1: Results of Scenario Survey

Scenarios
1. You are working in a computer lab. A student nearby is having difficulty with his/her program. You look at his/her code to help identify the error.
2. You are working in a computer lab. A student nearby is having difficulty with his/her program. You show the student a similar section of your code to help him/her understand.
3. You are given an example, already compiled, program (executable). Your assignment is to create a program that runs like this program. You decompile the example program and use parts of the resulting code in your assignment.
5. You have spent three hours working on a portion of your homework and you are having difficulty understanding it. There is word* from a previous quarter that answers your question. You look at the word long enough to gain understanding. You have learned from the word. You now use the information in the word to finish your homework.
6. You use word* while studying for a quiz. When you take the quiz, it is identical to the word. You repeat all of the answers from the word verbatim. Some of the answers are essay questions.
7. You have an assignment due. However, you have not yet had time to complete it due to an overload of course work. You get a time extension by telling your professor that you have been ill.
8. Your syllabus lists a web site that you are allowed to use. You use an algorithm from this web site without citing the source.
9. In recitation one week, your TA goes over the type of questions you need to study for next week's quiz. Your TA gives example questions and then answers them. When you get the quiz the next week, you realize your TA gave you the exact questions from the quiz. You write the exact answers you were given in recitation.
10. Your professor has forbidden group work on a particularly difficult homework assignment. You work on the assignment with someone else from the class.

* Word is notes and/or assignments from previous terms.



almost as many felt that it was not cheating at all (25%) as felt that it was serious cheating (27%).

Most TAs, (80% and 75% respectively) felt that looking at another students code to help him/her (scenario 1) and examining notes and/or assignments from previous quarters (word) to understand the material (scenario 5) were not cheating.

Students

The widest variation came from within the student population. For scenarios 1 and 5, a vast majority of the students felt that the actions did not constitute cheating (72% and 75% respectively).

However, on the remaining seven scenarios, a majority of the students felt that the actions were cheating to some degree. 53% of the students felt that an action that the professor has expressly forbidden (scenario 10) is serious cheating. Another 48% felt that a student using code from a web site listed as a reference site on the syllabus but not explicitly referencing it in their work (scenario 8) constituted serious cheating.

49% of the students surveyed believed that one person helping another by showing him/her a piece of code (scenario 2) was trivial cheating. For 44%, lying to a professor to gain a time extension (scenario 7) constituted trivial cheating. In the three other scenarios in which a majority of the students felt that the action was cheating (scenarios 3, 6, and 9), the numbers for trivial and serious cheating were approximately equal.

Across Groups Analysis – Instructors and TAs

For scenario 1, in which one student helps another in the computer lab, the percentage of TAs and instructors who felt that the action was not cheating was approximately equal. However, all of the instructors who considered the action cheating considered it to be serious cheating, while the TAs who considered it cheating felt it was trivial cheating.

All of the instructors and 83% of the TAs considered one person helping another by showing him/her a piece of code (scenario 2) to be cheating. Again, more of the TAs felt the action was trivial cheating while more instructors ranked it as serious cheating. This pattern also holds true for scenarios 3 and 8, the decompiling of a program and the use of code from a web site without citing the source. All of the TAs and instructors considered an action that the professor has expressly forbidden (scenario 10) to be cheating.

In scenarios 6 and 7, slim majorities of both instructors and TAs considered the actions to be cheating. Once again, most of the TAs considered it trivial cheating while the instructors considered it serious cheating.

Only in scenario 9 was there serious disagreement in the percentage of instructors and TAs who did not consider an action to be cheating – 10% and 50% respectively.

Across Groups Analysis – TAs and Students

In scenarios 1, 5, 6, 7, and 8, approximately equal percentages of TAs and students believe the action is not cheating, and more students than TAs believe the action is serious cheating. For scenarios 2, 3, 9, and 10, a higher percentage of TAs as compared to students believe that the scenario describes serious cheating and a lower percentage of TAs do not believe the action is cheating.

In every scenario but scenario 3, the percentage of students and TAs who felt that an action constituted trivial cheating were within 10%.

Across Groups Analysis – Instructors and Students

For two of the scenarios (1 and 3), the percentage of students and instructors who believe that the action was not cheating differ by only 3%. On scenarios 7, 8, and 10 the percentage of the two groups who did not feel that the action constituted cheating differed by less than 15%.

With the exception of scenarios 7 and 8, a higher percentage of students than instructors felt that the action was trivial cheating. A greater percentage of instructors as compared to students felt that an action did not constitute cheating in five scenarios (1, 5, 6, 7, and 9). In scenario 5, 25% more instructors than students felt that the action did not constitute cheating.

Across Groups Analysis – All Groups

When the rankings are divided into not cheating and cheating (the categories of trivial cheating and serious cheating are aggregated), the students, instructors, and TAs differ from each other by greater than 25% only on scenarios 2 and 10. On another four scenarios (3, 5, 6, and 8), the students, instructors, and TAs are within 25% of agreement. The groups are within 15% of each other for scenario 7 and 10% of each other for scenarios 1 and 10.

Four of the scenarios (5, 6, 7, and 9) are considered cheating by a greater percentage of students and TAs than instructors. For scenarios 1, 6, and 7, students, more than any other group considered an action to be cheating. A higher percentage of instructors than students or TAs ranked the activity as cheating in scenarios 2 and 8, while a higher percentage of TAs considered the activity to be cheating in scenarios 3 and 9.

In every scenario, a lower percentage of instructors than students or TAs considered the action to be trivial cheating. In another seven scenarios (1, 2, 6, 7, 8, 9, and 10), a greater percentage of instructors considered the action to constitute serious cheating.

When all three options (not cheating, trivial cheating, and serious cheating) are considered, a wide disparity in opinion frequently appears in the scenario results. However, when we consider only the options of cheating and not cheating, there is greater agreement among the students, TAs, and instructors.

Free Response Question

Answers to the free response question betrayed an almost virulent antagonism with the course. Students commented widely that the workload was excessive, and many felt that collaboration was a natural method of learning and should not be considered cheating.

VI. Discussion

Our results show that the first difficulty encountered while researching cheating is determining its definition. Considerable discrepancies in the ranking of the scenarios exist between the three groups (students, TAs, and instructors). In addition, there is wide deviation within the groups themselves.

The College of Computing has a very rigorous definition of cheating. For example, there is no collaboration, no discussion of the problem, and no help debugging from fellow students. Students are confronted with a situation where actions acceptable and encouraged in other classes are now considered cheating. One student's comment sums up the problem, "I think that what you all view as academic misconduct is not the traditional views [sic] so is often confused by the students."

Other students may be clear on the definition of cheating but object to it. Based on the answers to the free response question, many students feel that collaboration on homeworks is natural and helpful to the learning process: "People need to brainstorm and find solution [sic] in a group to look at the possibilities. Also the easiest way to learn to code is to see and have it explained by someone." On the other hand, another student felt that the desire for collaboration could be simple laziness; "[w]hy put up with doing all of the work, if I can simply work with a group of people and get the homeworks done much easier?"

The Georgia Tech culture, in particular the widespread and accepted practice of curving grades, could also contribute to the problem: students are in constant competition with each other. One student commented that "Georgia Tech is the kind of place where cheating thrives because the students are driven so hard that they panic...It's sad that Tech encourages competition so much in its students that the students actually feel the need to cheat."

Another important aspect of the problem is the difficulty of the course itself: the weekly homework, quiz, and lab constitute a heavy workload. "If I had taken this course my first quarter at Tech I would have been so discouraged that I would have thought I had made the wrong choice of schools," stated one student. Another feels "this course just takes up way too much time."

Student's responses to the free response question indicate widespread dissatisfaction with the structure, load, and necessity of the course. They also indicated a high degree of anxiety about the course, surprising since the term was ending when this survey was administered. Because CS1501 serves such a varied skill level, it is possible that those with fewer skills entering the course are intimidated and thus less likely to participate in discussions or ask questions. Students, then, might feel both anxiety from and anger towards CS1501.

The resources provided for the students drew the most diverse comments. One response indicated "[s]ince homework help sessions are available, there is no reason to cheat". Perhaps students "don't realize how MANY resources [sic] are available to them..." However, another student felt that "...people cheat because they have sucky TA's [sic] that don't give a crap about whether or not they pass or fail..."

There are some possible problems with this study. Our instructor data is drawn from a very limited pool: only four individuals are directly related to the course. Also this survey has only been conducted over one term's worth of participants. Additional research is needed to determine whether our primary findings are valid.

VII. Conclusion

Due to the nature of the course, CS1501 most likely has higher levels of cheating (not just detected cheating) than a typical Georgia Tech course. The results of the scenario survey indicate a lack of clear leadership in defining academic misconduct. When the instructors do not agree on what actions constitute cheating, the students and TAs are forced to develop their own interpretations. The lack of agreement between the instructors indicates a need for more discussion to determine which activities aid education and which are substitutes for it.

In both the scenario survey and free response answers, collaboration appears to be an important issue. By allowing collaboration, as suggested by both Singhania and Fienup, students may feel less anxiety and stress about the coursework and courseload. This allowance would be much more in tune with the attitudes of students, TAs, and some instructors, as indicated by the scenario surveys.

It may also be wise to split up the students according to anxiety level, as suggested by Howard, Murphy, and Thomas. This would hopefully enable students who were less computer savvy to ask questions without fear of appearing "stupid" in front of their peers.

The extreme nature of the situation and the uniqueness of the course require further investigation before we can consider the problem to be adequately addressed.

Appendix – Scenario Results

Scenario	Respondent	Not Cheating	Trivial Cheating	Serious Cheating
1. You are working in a computer lab. A student nearby is having difficulty with his/her program. You look at his/her code to help identify the error.	Instructors	3	0	1
	TAs	39	10	0
	Students	295	98	16
2. You are working in a computer lab. A student nearby is having difficulty with his/her program. You show the student a similar section of your code to help him/her understand.	Instructors	0	1	3
	TAs	8	24	16
	Students	137	200	72
3. You are given an example, already compiled, program (executable). Your assignment is to create a program that runs like this program. You decompile the example program and use parts of the resulting code in your assignment.	Instructors	1	0	3
	TAs	3	7	39
	Students	113	115	140
4. At a review session, the TA goes over the types of questions you need to study for the exam. The TA gives example questions and then answers them. When you receive the exam, you realize that the TA gave you the exact questions from the exam. Consider the TA's actions. <i>This survey was determined to be ambiguous.</i>	Instructors	N/A	N/A	N/A
	TAs	N/A	N/A	N/A
	Students	N/A	N/A	N/A
5. You have spent three hours working on a portion of your homework and you are having difficulty understanding it. There is word* from a previous quarter that answers your question. You look at the word long enough to gain understanding. You have learned from the word. You now use the information in the word to finish your homework.	Instructors	4	0	0
	TAs	36	9	3
	Students	306	74	27
6. You use word* while studying for a quiz. When you take the quiz, it is identical to the word. You repeat all of the answers from the word verbatim. Some of the answers are essay questions.	Instructors	2	0	2
	TAs	19	19	11
	Students	114	125	168

7. You have an assignment due. However, you have not yet had time to complete it due to an overload of course work. You get a time extension by telling your professor that you have been ill.	Instructors	1	1	2
	TAs	5	25	19
	Students	82	179	147
8. Your syllabus lists a web site that you are allowed to use. You use an algorithm from this web site without citing the source.	Instructors	0	1	3
	TAs	12	23	13
	Students	53	158	196
9. In recitation one week, your TA goes over the type of questions you need to study for next week's quiz. Your TA gives example questions and then answers them. When you get the quiz the next week, you realize your TA gave you the exact questions from the quiz. You write the exact answers you were given in recitation.	Instructors	2	0	2
	TAs	5	25	19
	Students	82	179	147
10. Your professor has forbidden group work on a particularly difficult homework assignment. You work on the assignment with someone else from the class.	Instructors	0	0	3**
	TAs	0	16	33
	Students	42	150	215

*Word is notes and/or assignments from previous terms.

** One instructor chose not to rank this scenario.

Bibliography

1. Centra, John A. (January 1970). "College Freshman Attitudes Toward Cheating". *Personnel and Guidance Journal*.
2. Fienup, Mark (September 1996). "Rethinking the CS-2 Course with an Object-Oriented Focus". *SIGCSE Bulletin*.
3. Greene, Aleza Spalter and Leonard Saxe (April, 1992). "Everybody (Else) Does It: Academic Cheating".
4. Howard, Geoffrey S., Catherine M. Murphy, and Glenn N. Thomas (1987). "Computer Anxiety Considerations for Design of Introductory Computer Courses". *Educational Research Quarterly*.
5. Lipson, Alberta and Nora McGavem (October, 1993). "Undergraduate Academic Dishonesty at MIT".
6. Sacrowitz, Marian (June, 1995). "An Unlevel Playing Field: Women in the Introductory Computer Science Courses".
7. Singhanian, Ram P. (Fall 1980). "Issues in Teaching the Introductory Course in Computers in Business Curriculum". *AEDS Journal*.
8. Kleiner, Carolyn and Mary Lord (November 22, 1999). "The Cheating Game: 'Everyone's doing it,' from grade school to graduate school". *U.S. News and World Report*.

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