

Perception of Academic Integrity among Students and Faculty: A Comparison of the Ethical Gray Area

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Abstract

As long as there is schooling, there will be cheating. At times, it may be a front page scandal such as recent willful fraud by administrators and teachers on high stakes testing in primary schools. At other times, a cheating incident may provide a teachable moment with regards to the ethics and integrity that are so critical to the engineering profession. As with many complex issues, cheating exists on a continuum of sorts: what is acceptable to one may be highly unacceptable to another, with a wide range of perceptions given a particular scenario. This work addresses related aspects of academic integrity at the university level. The authors first present a case study of a concerted effort to hold students accountable to a high standard and cultivate a culture of integrity and honor. This effort was initiated by the principal investigator within the Engineering program at East Carolina University in the spring semester of 2014. The program's core mechanics of materials class is at the epicenter of the effort. It is a required course for all students in the program, and it is the first engineering course in the typical sequence requiring rigorous formal laboratory reports. At the outset, casting a fine net for plagiarism of all sorts brought many students into the academic integrity process who were not accustomed to being considered cheaters. In response, the effort has evolved to include more thorough education on what constitutes plagiarism during the first weeks of the course. As a result, in the subsequent semesters, the culture of a higher standard is developing and the more rigorous expectation is generally known through the student population. The second focus of this work grew as natural questions from the effort to bring rigor to technical writing in the department. What is the perception of academic integrity issues among undergraduate students and faculty in the department and does it shift during a student's career? Where on the spectrum of "unacceptable" do various actions fall? Is it "more OK" to copy a homework assignment from a peer than it is to scour the internet for a solutions manual? A survey instrument was developed and used to elicit an indicator of the degree to which different actions are considered bad or ethically unacceptable. The populations compared include faculty, students in their first year of college, and upperclassmen who have taken the mechanics of materials class.

Introduction

This work falls into three broad sections. The first section will present a select summary of background work. The second section consists of a description of the current efforts to cultivate a

culture of academic integrity within the Department of Engineering. The third section presents a study designed to investigate differences in the perception of academic integrity issues between populations of students and faculty.

Background

From early in the 20th century, authors have approached the general topic of cheating from a wide range of perspectives. Earlier work often simply intended to quantify the extent of participation in cheating behaviors or how the prevalence is changing with time¹⁻³. Some works have a distinctly doomsday feel, with a clear implication that we are all in a handbasket bound for bad things, while others are much more optimistic⁴. Through the decades, the word “epidemic” appears in both academic and lay articles about cheating and academic integrity⁵⁻¹⁰. That fact alone may indicate that although the issue is deserving of attention, it may not be a substantially different moral landscape than it was 10, 50 or 100 years ago. In any case, researchers have investigated many attributes such as personality, demographic, psychological, social or situational indicators¹¹, various types of cheating behavior¹², as well as the factors that motivate students to participate in academic dishonesty¹³⁻¹⁶.

Improving the ethical landscape requires that both sides, students and faculty, have a clear picture of the rules. The survey instrument developed for this work follows the intent of Graham¹⁷, Higbee and Thomas¹⁸, and others in that understanding exactly what behaviors fall under the general umbrella of cheating is imperative for useful dialog. As indicated in a number of works,^{15,17,19} the burden of ensuring clarity is as much on the faculty as the student, if not moreso. Instructors have the responsibility to impart a crystal clear understanding of the rules of the game, and a practical understanding that different circumstances have different rules. Some may argue that this facilitates cheating, but to draw an analog from sport: no one would expect an American football player to be an instant convert to rugby or soccer without providing the player the full rules of the new sport’s code. By the same token, a player intending to swap codes would be remiss if he did not study the new rules. Faculty have the responsibility to make nuances of the rules on their playing field clear to the participants, and students must realize that different classes will have different rules. A number of studies show^{18,20} that there is appreciable difference between faculty and student perception of academic integrity issues. This is the ethical gray area that is part of the larger problem.

Current Efforts

The current efforts to improve the climate of academic integrity in Engineering at East Carolina University have been ongoing and include a number of components. An active link of the Order of the Engineer has been established and a vast majority of graduates join each spring. A one credit hour Introduction to Engineering course is required of all first year students. A number of lectures of that introductory course focus on academic integrity, including a seminar on policies and procedures by representatives from the ECU Office of Student Rights and Responsibilities. In addition,

a portion of the guest lecture by library research staff deals with plagiarism concerns. Instructors of the introductory course make certain the students understand that their term papers will be evaluated with plagiarism detection algorithms and highlight the penalties for submitting plagiarized work. To date, the four faculty members who have taught this particular course have been uniformly committed to this process and the additional instructional and administrative burden it can create when plagiarism is found.

The second course that serves as another locus of effort is the Mechanics of Materials laboratory course required of all students in our program. This course is nominally a junior level laboratory course. For a student on the typical course progression, it is the first course with formal laboratory reports that is taught within our department. From having taught both the Introduction to Engineering and Mechanics of Materials course for multiple semesters, my observations are consistent with those of Roig. Some students are legitimately unclear as to what constitutes plagiarism and appropriate citation, and that even among faculty, there is, again, a gray area, subject to interpretation or discussion.^{21,22}

In response to this perceived need, I have added and adjusted components designed to both educate students and enforce policies regarding academic integrity. From the outset, I have included a succinct syllabus statement regarding academic integrity with links to the campus policy and procedures. Realizing that a single line in a syllabus has about as much impact as the fine print of a terms of service agreement, there are several more layers to my approach. Our library provides a module on plagiarism and the campus policies and procedures that can be added to our class learning management system. That module has been used successfully since the outset of this effort in Spring 2014. In Fall 2015, I implemented an electronic policy acknowledgement that students must complete in our learning management system before any course content assignments are made available. The statements included in the policy acknowledgement regarding academic integrity and plagiarism are:

- I have completed the academic integrity/plagiarism module and understand the ECU academic integrity process, including what actions constitute academic integrity violations.
- I understand that citations in this class must be in IEEE format.
- I understand that images and information from other sources require proper citation, and that a citation consists of two parts: the in-text citation and the entry in the reference list.

I provide a concise guide to citations, geared toward the typical sources used for the reports in the mechanics course. In one semester, we required the students to complete the Indiana University Plagiarism Certification Test²³. From both student and faculty feedback, the assignment was not incorporated smoothly, so it was removed for Fall 2015. Other changes in the scheduling of assignments in the semester will allow for optional inclusion in future semesters. The fact that the students' work will be assessed with plagiarism detection algorithms is communicated verbally, via syllabus statement, and by an acknowledgement step that is built into each report submission on the learning management system.

Methods

This section describes the study population and survey instrument. The study protocol was reviewed and approved by institutional review board as per federal, state, and local regulation. Study recruitment is conducted via email, campus flier placement, and announcement to faculty at department meetings and to students by faculty in key courses. The instrument is administered using a Qualtrics survey platform. No personally identifiable information is collected and waiver of documentation of consent ensures anonymity of responses.

Study Population

The target population consists of faculty and students of the Engineering program. Current enrollment is approximately 550 students with 30 faculty. A total of 72 students and 18 faculty responses were recorded during the 20 days of data collection. The student respondents are further divided by rank. In this work, someone in the first or second semester is considered a freshman, while the upperclassmen designation for this study is defined by having earned credit for the required Mechanics of Materials course. Historically, most students take this in the fall of the third year.

Survey Instrument

The survey instrument for students consists of five main parts, each described in subsections that follow. The only part of the faculty instrument is identical to Part Two of the student version of the instrument.

Part One of the student instrument presents nine broad categories of cheating behavior, listed below and in Appendix Table A1. The categories are drawn from those common to the work of McCabe and Bowers²⁴ with some minor rewording to update the text while keeping with the spirit of the earlier surveys. Students are asked to indicate how many times they have engaged in each behavior during their time in college using a four point Likert scale ranging from Never (1) to Many Times (4).

1. Using unauthorized material (cheat sheet/mobile device) during a test
2. Copying from another student during a test
3. Helping someone else to cheat on a test
4. Copying from another student during a test without their knowledge
5. Fabricating or falsifying a bibliography entry
6. Turning in copied material as own work (*i.e.* Chegg, solution manual)
7. Turning in work done by someone else (*i.e.* copying homework from a classmate or receiving work from a previous semester at ECU)
8. Collaborating on an assignment when the instructor asked for individual work
9. Copying a few sentences of material from a published source without footnoting it or including a citation

Parts Two through Five of the student instrument use a more detailed list of twenty behaviors. These parts of the instrument ask four research questions in turn. The list of twenty behaviors is listed immediately below and in Appendix Table A2. Two of the items were intended to serve as a negative control of sorts: Scenario 3: *Writing-quoted with citation* and Scenario 14: *YouTube to study*. Neither of these should be considered an academic integrity infraction. The remainder are

designed to present gradations of similar situations. This list includes shortened descriptor phrases to facilitate the presentation and discussion of results. In the instrument, only the full descriptions are presented to the respondent. The nominative person of the descriptions are adjusted as appropriate for each part.

1. **Writing-verbatim, no citation** You copy a passage from a website word for word without including a citation/footnote.
2. **Writing-verbatim, with citation** You copy a passage word for word, but include a citation/footnote.
3. **Writing-quoted with citation** You copy a passage word for word, but include a citation/footnote and put the passage in quotations.
4. **Writing-patchwork plagiarism** You copy a passage, but change a few words and include a citation/footnote.
5. **Lab-recreate data** You have lost the data collected during a lab. You try to remember/recreate the data.
6. **Lab-borrow data** You have lost the data collected during a lab. You ask a friend in another section for his/her data.
7. **Figure-adapt, no citation** You draw a figure based on but not identical to a figure from a textbook, but do not cite the textbook.
8. **Figure-copy, no citation** You draw a figure virtually identical to a figure from a textbook, but do not cite the textbook.
9. **Download book** You search for and download a .pdf of a copyrighted textbook.
10. **HW-get when sick** You have been sick and ask a friend to provide their homework which you copy and submit.
11. **HW-give to sick friend** A friend has been sick, and asks you to copy your homework and you provide the homework.
12. **Exam-ask earlier section** You are in the 11 AM section of a course. You ask your friend in the 9 AM section for details about an exam before you walk in to take it.
13. **Multiple submission** You submit an essay you wrote for your history class last semester to your English class this semester.
14. **YouTube to study** You use YouTube videos on a topic to study for an exam.
15. **Take home-internet help** Your instructor assigns a take home test with explicit instructions to use only your text or course notes as resources. You search for material on the internet.
16. **Take home-peer help** Your instructor assigns a take home test with explicit instructions to use only your text or course notes as resources. You and two classmates work collaboratively through the entire exam.
17. **Exam-peek but do not change** You purposely look over a peer's shoulder to see exam answers and realize some of your answers differ, but you do not change your answers.
18. **Exam-peek and change** You purposely look over a peer's shoulder to see exam answers and change your answers to match.
19. **Exam-mobile device** You use a mobile device during an exam to get help (either via internet or communicating with a peer)
20. **HW-online solutions** You use Chegg or similar online solution sources to complete homework.

Part Two of the survey, which is the first exposure the respondent has to this more detailed list of

behaviors, asks that the student use a slider scale to rank and rate all twenty behaviors in a comparative way. The response window aligns all responses on a single screen and provides numerical feedback on mouse-over for each slider to allow the respondent to tune the value for each behavior. The zero end of the scale is described as “not an academic integrity violation” while the other end, valued at 100, is labeled “severe academic integrity violation”. For this part, the scenarios are presented in generic third person: “A student copies...”

Part Three uses the same list of twenty behaviors but presents a new evaluation scale designed to elicit an indication of the ease with which a student decides to participate in a given behavior. This question attempts to get at the guilt factor or “moral compass” component of decision-making. This is a complex question, and a simple two-dimensional slider ranging from “very easily” to “never” is insufficient to capture an important aspect of this issue. In addition to the described slider, a “not applicable” box is provided as an option if the respondent does not consider the action to be wrong or unethical. This differentiates between the important cases of easily deciding to act in a particular way despite feeling that the action is unethical, and easily acting in that way because there is nothing unacceptable or unethical about the action. For this part, the scenarios are presented in second person: “You copy...”

Part Four uses the same twenty behaviors and the identical slider configuration, but asks the students to rate how easily they believe their *peers* would decide to participate in the behaviors. This distinction is intended to illustrate another aspect of the perception of academic integrity issues. The scenarios, like in Part Two, are phrased in third person.

Part Five is the final item that involves the list of twenty behaviors, and is worded in second person again. This item asks for the number of times the respondent has acted as described in the most recent two semesters (three or more times, twice, once, or zero).

The faculty version of the instrument presents the twenty behaviors for ranking and rating as in Part Two of the student version of the instrument.

Results and Observations

A total of 72 students and 18 faculty responded to the survey request. Those numbers correspond to a student response rate of approximately 28% of students meeting study requirements and 60% of faculty. Incomplete responses for Parts Three, Four, or Five of the student survey were eliminated from the analysis of only that part. Such incomplete responses account for the variation in the number of responses, n , in the following figures and tables. Results and observations for each section will be presented in turn, followed by a general discussion in the next section.

Part One: Bowers and McCabe follow-on

Part One of the student survey is intended to mimic previous pivotal studies²⁴. The response slider allowed only integer responses and questions were presented independently, so unanswered items were allowed in this part. It must be noted that a slider selection of 1 corresponds to a student having never acted in that way, or zero times.

Table 1 presents the results from Part One. The first four of the nine behaviors relate to dishonesty

during testing, and the overwhelming majority of students indicated they had never done so. Interestingly, more students admitted to having helped someone else cheat on a test, but in no case did any student select a 3 or 4 response for the test related items. The results for behaviors one through four are generally consistent with the percentages reported by Bowers and McCabe for schools with established honor codes.

The remaining items relate to written work or other general assignments. More than half admit to collaborating when doing so was not allowed, while 40% indicate that they have used Chegg or a solutions manual. Of note, given the focus in this program on plagiarism and writing, are the reported total percentages for behaviors 5 (16%) and 9 (15%), which relate to proper use of sources. Those two items are also consistent with the honor code schools reported by Bowers and McCabe. Behaviors 6,7, and 8 are worded more generally, in that they may apply to various types of assignments. These percentages (40%, 28%, and 52% respectively) align more closely with prior results reported for schools without honor codes.

Table 1: Nine Basic Cheating Behaviors. These behaviors were rated using a Likert scale ranging from 1 (never) to 4 (many times). No students reported a response of 4 for any of these items.

Behavior	Number (Percent) Reported			Total <i>n</i>
	1 (Never)	2	3	
1 Using unauthorized material during a test	55(95%)	3(5%)	0	58
2 Copying from another student during a test	50(91%)	5(9%)	0	55
3 Helping someone else to cheat on a test	46(84%)	9(16%)	0	55
4 Copying from another student during a test without their knowledge	51(93%)	4(7%)	0	55
5 Fabricating or falsifying a bibliography entry	47(84%)	9(16%)	0	56
6 Turning in copied material as own work (Chegg, solution manual)	36(60%)	20(33%)	4(7%)	60
7 Turning in work done by someone else (classmate, previous semester's work)	43(72%)	15(25%)	2(3%)	60
8 Collaborating on an assignment when forbidden	28(47%)	25(42%)	6(10%)	59
9 Copying from published source without including a citation	48(86%)	7(13%)	1(2%)	56

Part Two: Comparison of students and faculty

Part Two of the survey is the only segment with both student and faculty respondents. In this survey section, the respondents were asked to adjust a slider for each scenario so as to both rank and rate the severity of the behavior. These results are at the heart of the ethical gray area.

Figure 1 is a box plot presentation of the responses. The median response for each of the twenty scenarios for each of the three study populations is indicated with a filled square. The extent of the colored bar represents the interquartile range (IQR), while the whisker lines extend from the 2.5 to the 97.5 percentiles. Figure 1 provides the anecdotal indication that faculty generally

perceive scenarios as more serious than students do, and that there is perhaps a slight trend that

freshmen consider many items more serious than upperclassmen. To that end, Figures 2 and 3 display the differences in median values between the groups.

Regarding Figure 1, the tight IQR and nearly zero median response from faculty is as expected for 3:*Writing-quoted with citation* and 14:*YouTube to study*. These items were the intended controls or baseline responses. The nonzero IQR and whisker length from the student response to these two items include one clear outlier, but also enough other legitimate variation to indicate a potential misconception that should be further investigated. At the severe end of the scale are 16:*Take home-peer help* and 18:*Exam-peek and change*, which, according to the extremely tight IQR and maximum scores from faculty, are resoundingly not acceptable behaviors. The low value for the 2.5 percentile for the faculty response to 15:*Take home-internet help* results from a single outlier point. Similarly, only two of the faculty responses for 19:*Exam-mobile device* were not 99 or 100 scores. The faculty consensus is strong regarding what is acceptable behavior for both take home and traditional examination environments while the student responses vary considerably. Scenario 17:*Exam-peek but do not change* in particular could ignite additional interesting ethical discussion. In the scope of the current work, its uniformly high IQR simply indicates that it, as with many of the other scenarios yet to be discussed, falls into the portion of the gray area where there is neither clear disagreement nor strong consensus within or among the study groups.

Several other features in Figure 1 point to the problematic part of the gray area. Items for which a given median lies outside the 95% notch extent for a different group's response to the same question are significant. In Figure 1, this interval is indicated with x markers. The small sample sizes contribute to several instances of the notch interval extending beyond the IQR. While several scenarios come close to meeting that significance criteria, only five of these comparisons actually do. Faculty and upperclassmen differ for 10:*HW-get when sick* and 11:*HW-give to sick friend*. Faculty differ from both freshmen and upperclassmen on 12:*Exam-ask earlier section*, 15:*Take home-internet help*, and 16:*Take home-peer help*. Even within faculty, the large IQR for 2:*Writing-verbatim, with citation* indicates that there is not consensus as to what constitutes plagiarism. Though not central to this work, the responses for 10:*HW-get when sick* and 11:*HW-give to sick friend* may speak to one of the important shifts noted by other researchers in students during college: that of rationalizing behavior due to situational factors. These areas represent the most critical aspects of the gray area. All of these issues must be targeted to address the gap in perception.

Figure 2 shows a simple difference between the median values of the sub-groups to illustrate the degree to which faculty and student perceptions differ. Markers above zero indicate that the faculty perceive the scenario as more severe, while markers below zero indicate that the student group rated the scenario as more severe. This analysis is purely graphical and does not consider whether the differences meet the criteria for significance. Five scenarios show little difference in median rating for both student groups: 3:*Writing-quoted with citation*, 5:*Lab-recreate data* 14:*Youtube to study*, 18:*Exam-peek and change*, and 19:*Exam-mobile device*. These areas of common understanding should be leveraged to expand that shared understanding to related issues.

When considering results as presented in both Figures 1 and 2, it is most clear (and reassuring) that everyone endorses YouTube as an educational tool. The strong agreement of median for 18:*Exam-peek and change* and 19:*Exam-mobile device* as seen in Figure 2 must also consider the large IQR from Figure 1. These two are topics that, although the median values agree, still belong to the gray area and must be addressed.

Faculty view the majority of the scenarios as more serious than the student respondents. The largest discrepancies between student and faculty perception are for 15:*Take home-internet help*, and 16:*Take home-peer help*. Faculty clearly indicate that these are unacceptable behaviors with small standard deviation, while the much larger IQR shows in yet another way that these behaviors fall into the ethical gray area.

Though Figure 2 is intended to illustrate the difference between faculty and students, it is clear that the grouping or separation distance between the freshmen and upperclassmen varies. Figure 3 shows difference between the medians for the younger and older student groups. As with faculty to student comparison, the older students generally have a milder perception of a given scenario. The freshmen have a more acute sense of what is unethical or unacceptable. As with Figure 2, markers above zero indicate that the freshmen perceive the scenario as more severe, while markers below zero indicate that the upperclassmen rated the scenario as more severe. It is important to again note that these differences do not meet the significance criteria and must be considered anecdotal.

Parts Three and Four: Comparison of self and peers

Parts Three and Four of the study present the same twenty scenarios with a new type of slider. These question sets are designed to get at how easily a student chooses to act in a manner he or she considers wrong or unethical. All student data is pooled for this analysis ($n=49$). In Part Three, the student is asked to rate the scenarios based on personal perception (their own actions), and in Part Four, the student is asked to answer how their ECU Engineering peers would act. For each item, the student may respond instead to indicate that the scenario is not wrong or unethical.

Figure 4 presents both a box plot representation of the ease-to-act responses and a bar chart with percentages of respondents indicating that a particular scenario is not wrong or unethical. The bar chart percentages appear on the right vertical axis. The median ease-to-act value is noted by the magenta square for self and green circle for peers. The stem line length represents interquartile range. Maxima and minima are not included. The 95% confidence notch interval is indicated on both data sets with an x marker.

The difference between the self and peer ratings are profound, with many medians truly on opposite ends of this choice spectrum. In the comparison between students and faculty perceptions in Part Two, only 5 instances demonstrated median differences meeting the significance criteria. In this case, only two scenarios do not, and one of those is 3:*Writing-quoted with citation*. Having less than 100% of responses selecting not wrong or unethical for scenario 3 is another indication of a student misconception. Overall, however, the median response value for the slider response for Part Three (Self) do track with the percentage of students selecting that the item is not wrong or unethical.

Consistent with the results from the other survey items, scenarios 3:*Writing-quoted with citation* and 14:*Youtube to study* have a high percentage indicating the behavior is not wrong. It is curious that these two (3 and 8) are not closer to 100% since several of the more severe scenarios are quite close to zero. These severe cases include scenarios 1:*Writing-verbatim, no citation*, 10:*HW-get when sick*, 11:*HW-give to sick friend*, 16:*Take home-peer help*, 18:*Exam-peek and change*, and 19:*Exam-mobile device*. Scenario 19, interestingly, was the only item to have no responses indicating *not wrong or unethical*.

Part Five: Recent self-reported cheating behavior count

Part Five, the final section of the survey instrument, asks students to indicate how many times in the last two semesters they engaged in the twenty behaviors. Figure 5 summarizes these results in a paired stacked bar format. Each bar is a histogram representing the percentage of respondents giving each of the four possible responses: never, once, twice, three or more. The left bar of each pair represents the freshmen while the right bar represents the upperclassmen. As with Figure 3, these responses indicate that the more seasoned students participate in these behaviors more commonly. In particular, 9:*Download book* and 20:*HW-online solutions* are markedly increased in the upperclassmen. A number of forces are likely at play to influence those increases: older students may be more cash poor as well as more willing to cut corners under the demands of the more rigorous upper level coursework. Also at work may be the fact that current students have been raised during this age of file sharing and effortless digital access.

Conclusion

In summary, these results affirm the previously noted differences in the perceptions between faculty and students, and indicate that there may be a small shift between the freshman and junior year. The results from the Bowers and McCabe follow-on questions indicate that the focus on proper technical writing has been effective, at least to the degree that these results correspond to those reported by schools with honor codes in place. A more rigorous statistical analysis is warranted as well as continued data collection. The most striking result of the present work is the difference between what students indicate they are willing to do themselves and what they believe their peers are willing to do. There may be bias in that only students who consider themselves highly ethical would volunteer time and effort to complete a study on academic integrity. To close with one of the original questions posed by the investigators: is it “more OK” to copy a homework from a peer than it is to scour the internet for a solutions manual? Figure 1 says so, but also highlights the extent of the ethical gray area, paving the way for both future focused investigation and adjustments in classroom approach.

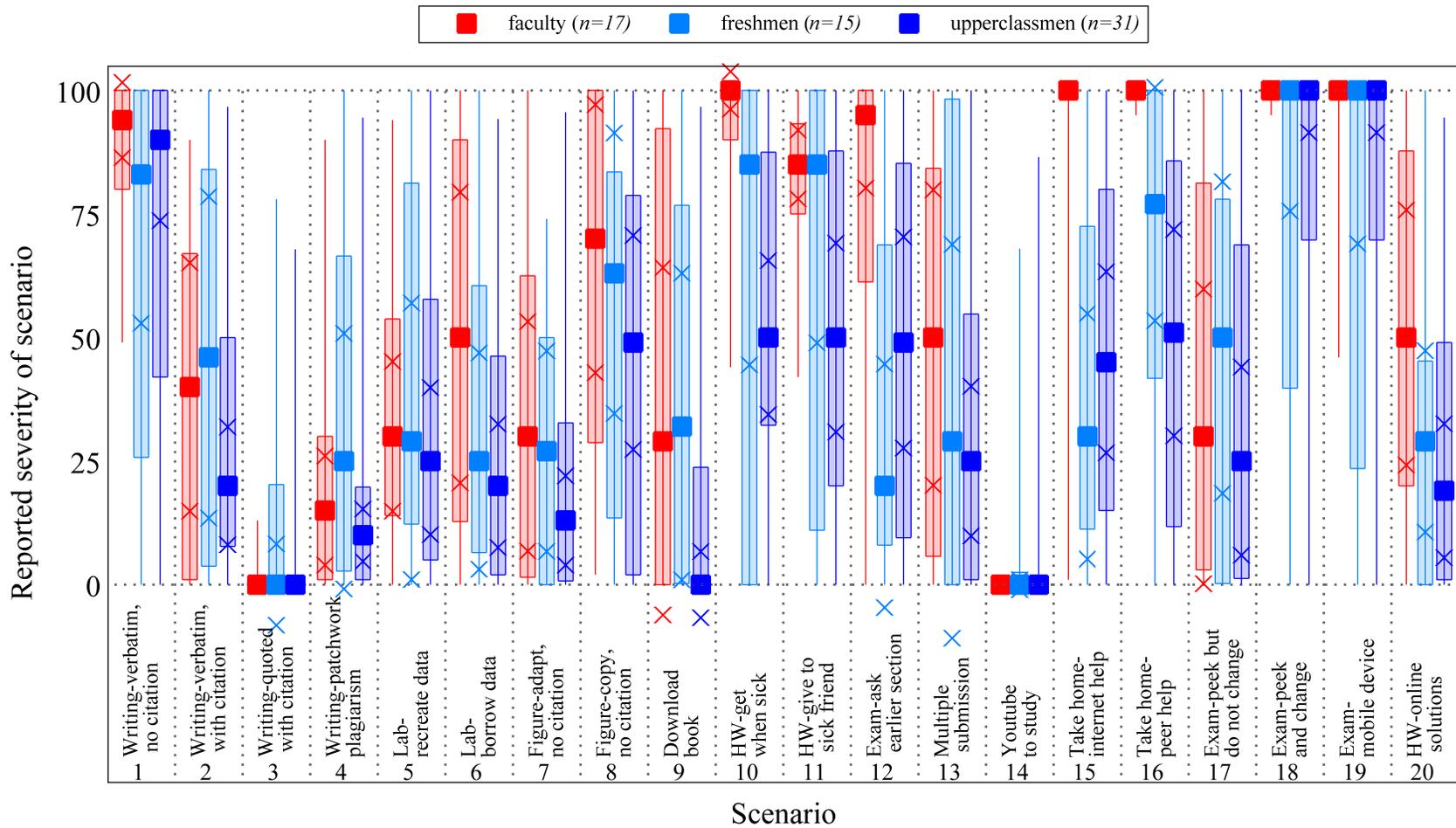


Figure 1: Reported severity of twenty academic integrity scenarios. The median value is represented by the filled square. The interquartile range is represented by the filled bar. The whisker line extends to the 2.5 and 97.5 percentile. The x markers indicate the 95% confidence interval of the medians. The three study groups (faculty, freshmen students, and upperclass students) are represented according to color. The twenty scenarios are listed in Table A2.

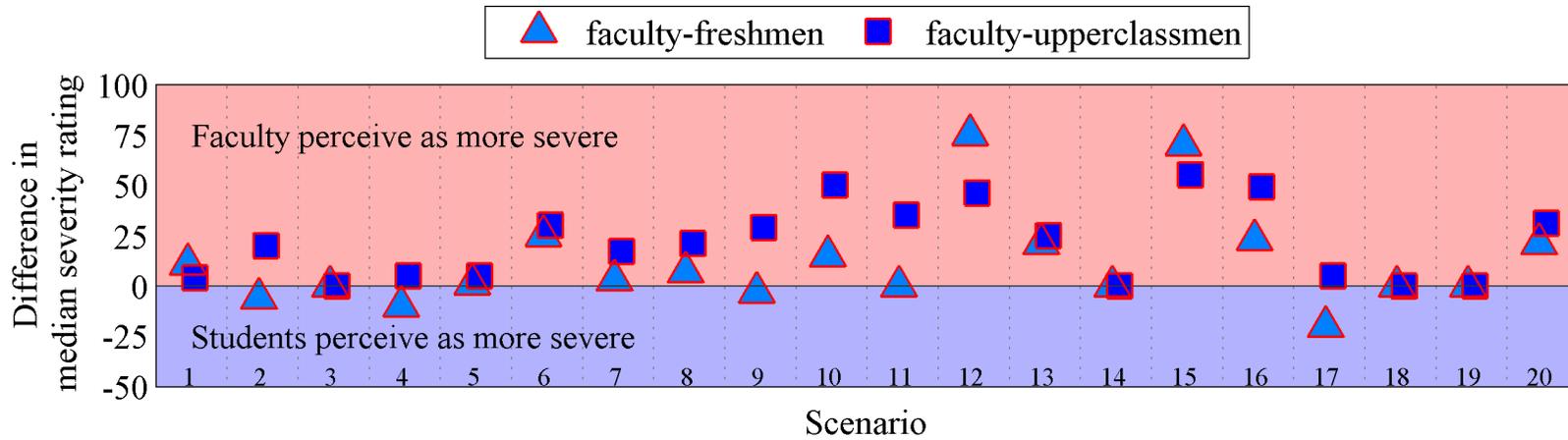


Figure 2: Difference in means of reported academic integrity severity for twenty scenarios. This plot reports the difference between the faculty and each of the two student groups studied: freshmen and upperclassmen. The twenty behaviors are listed in Table A2.

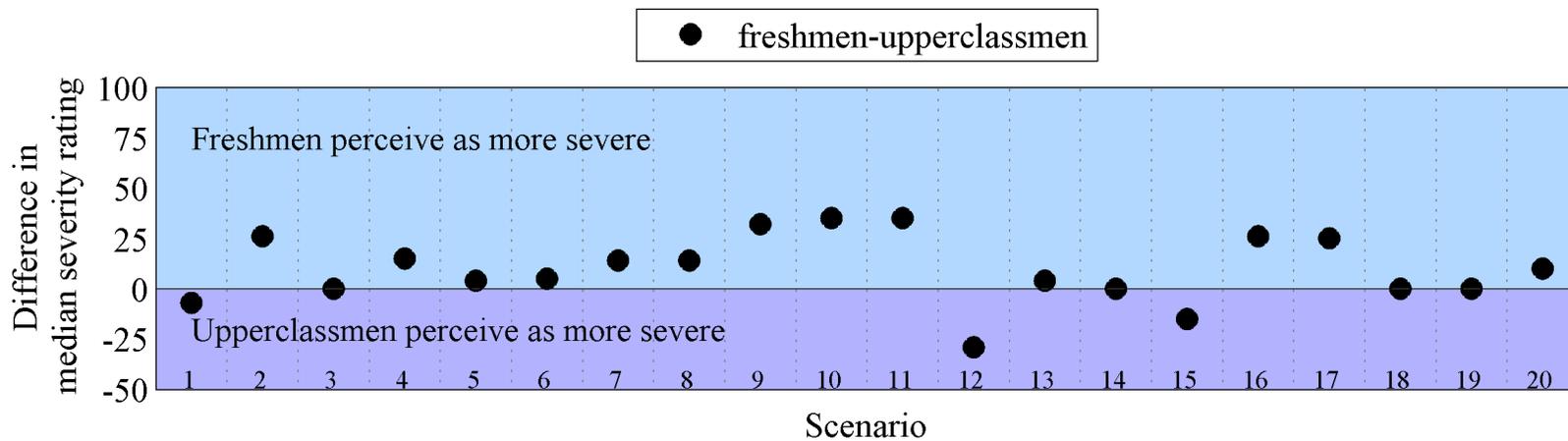


Figure 3: Difference in means of reported academic integrity severity for twenty scenarios. This plot reports the difference between the two groups of students studied: freshmen and upperclassmen. The twenty behaviors are listed in Table A2.

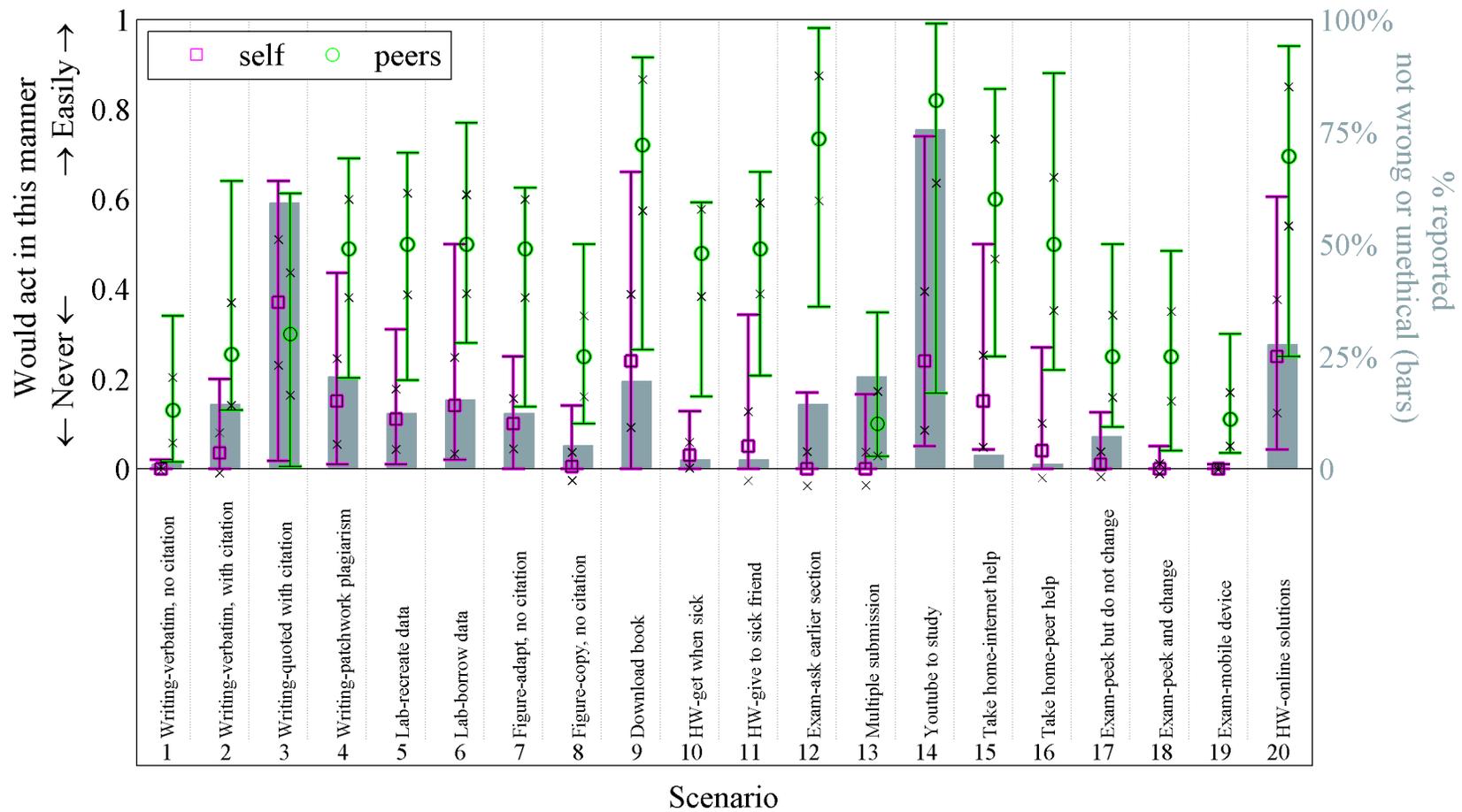


Figure 4: One of the questions intended to reach at the issue of deciding to act, despite considering the action wrong or unethical. The green and magenta are box plot representations with the median value (square or circle) and the interquartile range (stem lines). The black x markers indicate the notch interval (95% confidence). The gray bars, with scale indicated on the right vertical axis, represents the percentage of students indicating that a given behavior was *not* wrong or unethical. All student responses regardless of class were pooled in this analysis ($n=49$).

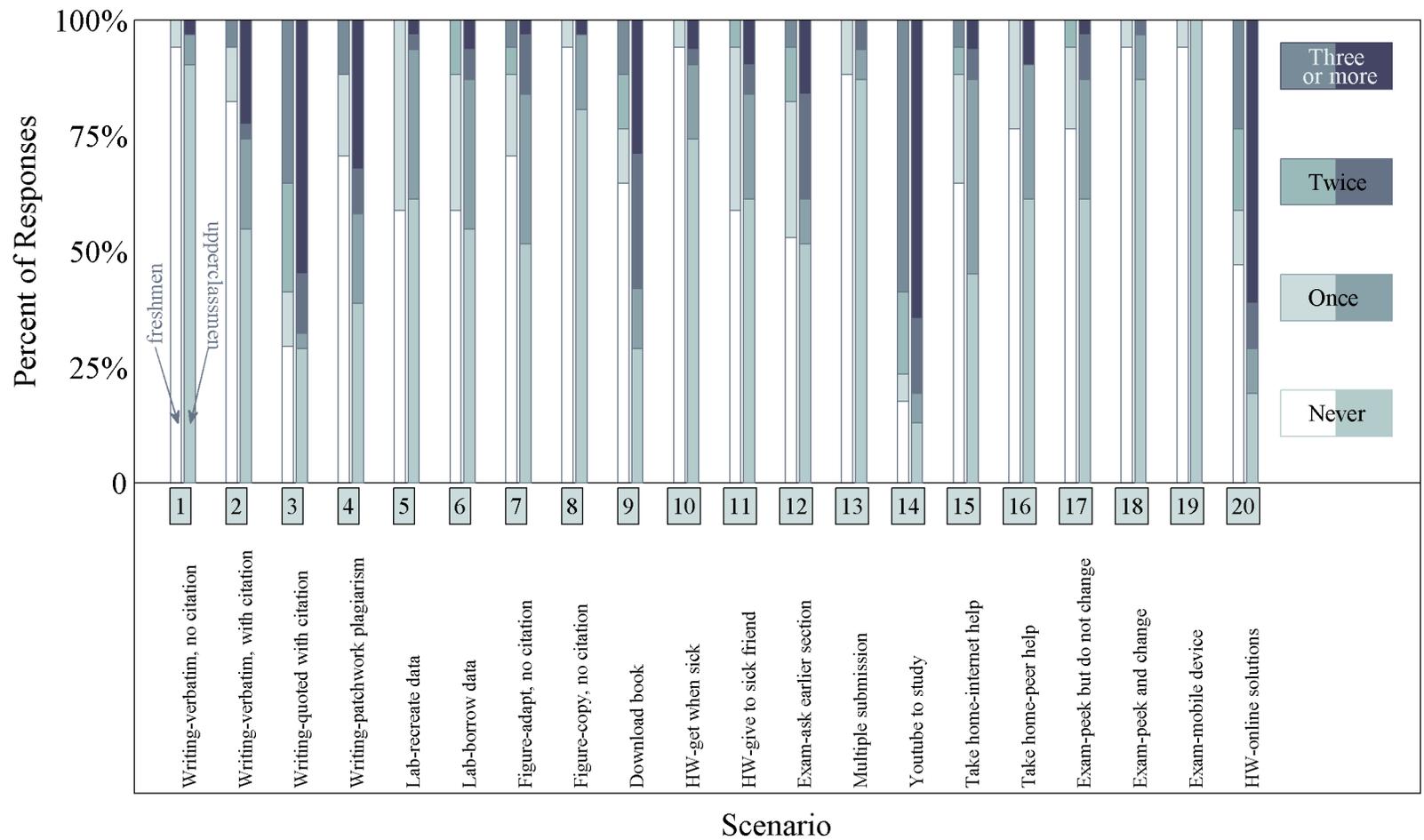


Figure 5: This question asked how many times in the prior two academic semesters had the student engaged in each of twenty behaviors. Allowable discrete responses were zero, one, two, or three or more times. The segments of the bar represents the percentage of respondents selecting a given answer. The left half of each composite bar represents the responses from the freshmen ($n=17$), while the right half represents the upperclass students ($n=31$).

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Appendices

Table A1: The nine broad cheating behaviors used in Part 1 of the student survey instrument.

1. Using unauthorized material (cheat sheet/mobile device) during a test
2. Copying from another student during a test
3. Helping someone else to cheat on a test
4. Copying from another student during a test without their knowledge
5. Fabricating or falsifying a bibliography entry
6. Turning in copied material as own work (i.e. Chegg, solution manual)
7. Turning in work done by someone else (i.e. copying homework from a classmate or receiving work from a previous semester at ECU)
8. Collaborating on an assignment when the instructor asked for individual work
9. Copying a few sentences of material from a published source without footnoting it or including a citation

Table A2: The twenty more specific behaviors used in Parts 2-5 of the student survey instrument and in the only part of the faculty instrument.

1. **Writing-verbatim, no citation** You copy a passage from a website word for word without including a citation/footnote.
2. **Writing-verbatim, with citation** You copy a passage word for word, but include a citation/footnote.
3. **Writing-quoted with citation** You copy a passage word for word, but include a citation/footnote and put the passage in quotations.
4. **Writing-patchwork plagiarism** You copy a passage, but change a few words and include a citation/footnote.
5. **Lab-recreate data** You have lost the data collected during a lab. You try to remember/recreate the data.
6. **Lab-borrow data** You have lost the data collected during a lab. You ask a friend in another section for his/her data.
7. **Figure-adapt, no citation** You draw a figure based on but not identical to a figure from a textbook, but do not cite the textbook.
8. **Figure-copy, no citation** You draw a figure virtually identical to a figure from a textbook, but do not cite the textbook.
9. **Download book** You search for and download a .pdf of a copyrighted textbook.
10. **HW-get when sick** You have been sick and ask a friend to provide their homework which you copy and submit.
11. **HW-give to sick friend** A friend has been sick, and asks you to copy your homework and you provide the homework.
12. **Exam-ask earlier section** You are in the 11 AM section of a course. You ask your friend in the 9 AM section for details about an exam before you walk in to take it.
13. **Multiple submission** You submit an essay you wrote for your history class last semester to your English class this semester.
14. **YouTube to study** You use YouTube videos on a topic to study for an exam.
15. **Take home-internet help** Your instructor assigns a take home test with explicit instructions to use only your text or course notes as resources. You search for material on the internet.
16. **Take home-peer help** Your instructor assigns a take home test with explicit instructions to use only your text or course notes as resources. You and two classmates work collaboratively through the entire exam.
17. **Exam-peek but do not change** You purposely look over a peer's shoulder to see exam answers and realize some of your answers differ, but you do not change your answers.
18. **Exam-peek and change** You purposely look over a peer's shoulder to see exam answers and change your answers to match.
19. **Exam-mobile device** You use a mobile device during an exam to get help (either via internet or communicating with a peer)
20. **HW-online solutions** You use Chegg or similar online solution sources to complete homework.