A Longitudinal Study of the Perception of Academic Integrity among Students and Faculty

Teresa Ryan, East Carolina University

Dr. Teresa Ryan teaches mechanical engineering fundamentals such as Dynamics, Mechanics of Materials, Acoustics and Vibrations. She also focuses on technical communication skills within an engineering context. Her research interests include acoustics, the dynamics of complex structures, and the use of laser Doppler vibrometry for characterization of such structures including percussion instruments, landmines/IED, and coupled resonator arrays.

Dr. Colleen Janeiro, East Carolina University

Dr. Colleen Janeiro teaches engineering fundamentals such as Introduction to Engineering, Materials and Processes, and Statics. Her teaching interests include development of solid communication skills and enhancing laboratory skills.

Dr. William E. Howard, East Carolina University

William E (Ed) Howard is an Associate Professor in the Department of Engineering at East Carolina University. He was previously a faculty member at Milwaukee School of Engineering, as well as as a design and project engineer with Thiokol Corporation, Spaulding Composites Company, and Sta-Rite Industries.

Dr. Patrick F. O'Malley, Benedictine College

Patrick O'Malley teaches in the Mechanical Engineering program at Benedictine College in Atchison, KS.

A Longitudinal Study of the Perception of Academic Integrity among Students and Faculty

Abstract

Cheating has unfortunately been a perpetual issue in education. Headlines through the decades and generations often seem to imply that the next upcoming crop of students is far worse, much less virtuous, and more prone to try and skate by through cheating than prior generations. The current project intends to collect longitudinal data to begin to inform whether such headlines are part of the "Get off my lawn!" phenomenon of aging, or if there is a fundamental shift in the moral character of the students of today. This work reports on the second year of this ongoing study of the differences in perception of academic integrity issues among students and faculty. The study grew out of an effort to formalize and increase the rigor of instruction regarding plagiarism in technical writing. The scope expanded to include an instrument administered to both students and faculty in (REDACTED) that aimed to characterize the degree to which different cheating behaviors are considered bad or ethically unacceptable. For example, is the sharing of a homework with a peer who was ill before the due date more or less "wrong" than asking an earlier section of a course what is on an exam before walking in to take the exam? In addition, students who are in their first or second semester of college are compared to upperclassmen to investigate shifts of these perceptions as the students progress through their college careers. As a supplement to the items that gauge the perception of these academic integrity behaviors, the study also polls student respondents to self-report the number of times they have cheated. The ongoing work intends to administer the same instrument annually and report on changes over time as well as comparison between programs.

Introduction

This paper first presents a brief review of prior work related to the current aims in Section 1. The study design, the survey instrument, and a brief description of the institutions participating in the study are included in Section 2. Results and observations are in Section 3 followed by concluding remarks and an overview of the anticipated future direction of this work in Section 4.

1 Background

The study of academic dishonesty and the notion of character reaches back nearly a century in the literature. A set of studies carried out by two pioneering sisters between the world wars involved direct observation of young women in teacher preparation programs given the opportunity to cheat in different contexts[1]. One of their main conclusions was that specific, timely, direct instructions to not cheat was a significant factor in the percentage of students who participated in an opportunity to cheat. A 1932 survey by C. O. Mathews probes at the same discrepancy in perception that persists between students and faculty on matters of academic ethics that this work aims to investigate[2]. In the intervening eight decades, a wide variety of assessments have been used to study indicators (social club membership, gender, personality traits) and motivating factors (GPA, perceived pressure, perceived severity of penalty) and these different angles have been investigated from sociological, psychological, and other contextual perspectives[3–10]. The topic of academic dishonesty has had all of this careful attention, yet daily, educators in the trenches face this pervasive, elusive enemy.

About thirty years after the work of C. O. Mathews and the Atkins sisters was the work of Bowers[11] and another thirty years after that was the work of McCabe and Trevino[12]. Those two studies have been the most sweeping in scope, each involving thousands of students nationwide responding to anonymous surveys. These two pivotal works, along with many of the others, including a recent effort by Ryan et al.[13], rely at least in part on self-reported cheating behavior. That fact complicates the interpretation of any such results in an absolute way due to the uncertainty of such self-reports[14], particularly with regards to the incidence of plagiarism[15–18]. Part of this uncertainty stems from the simple question of whether the students are answering truthfully, but another important part stems from a genuinely imperfect understanding of what constitutes plagiarism[17,18]. Recent cases of plagiarism "witchhunts" in Germany[19] and in the United States[20,21] have resulted in rescinded degrees, resignations, and humiliation. These high profile incidents also serve as reminder of the importance of diligence and education in these matters.

This work will focus on two related threads of prior inquiry: the characteristics of the participating institutions[22–24] and the degree of agreement between different groups of perceptions of different acts of academic dishonesty[2,13,25–28]. A clearer understanding of the ethical landscape supports the overall aim of this work, which is to inform the efforts of faculty to *minimize* the difference in these perceptions. When both the students and faculty have a crystal clear understanding of the rules, there is more room for effective delivery of the intended educational content.

2 Method

This section describes the study population, the participating institutions, and the 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/or 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 in engineering at any of the three participating institutions described below. In year one of the study (AY 2015-2016), the instrument was administered to only one site, [redacted]. A total of 72 students and 18 faculty responded during that administration. In year two of the study, a total of 46, 36, and 33 student responses and 4, 10 and 4 faculty responses were recorded during the current academic year (AY 2016-2017) from AAU, BBU, and CCU respectively. 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 is for those in their third or later semester of study.

Participating Institutions

AAU is small, religious institution with approximately 1900 total undergraduate students, 180 engineering students and 8 engineering faculty. AAU students pursue degrees in Mechanical, Civil, Electrical and Chemical Engineering. AAU is the only participating institution with a formal honor code. The AAU honor code is not campus wide, but has been implemented for all engineering students. AAU is located in a town of approximately 11,000 residents which is approximately an hour from a moderately populous city (500,000 residents).

BBU is a large public institution located in a city of about 100,000 residents. It offers an undergraduate general engineering degree. The engineering program at BBU has a faculty of 30 and an engineering student population of approximately 600 on a campus of approximately 29,000 students total. There is no formal university or department honor code at BBU.

CCU is another small, religious institution with approximately 3000 undergraduate students, 2800 graduate students, and just under 500 undergraduate engineering majors served by 29 faculty with teaching responsibilities. CCU also has no formal honor code. It is an urban campus situated in a metropolitan area with a population of several million residents.

Table 1: Characteristics of Participation Institutions

Characteristic	AAU	BBU	CCU
Honor Code	yes	no	no
Campus Type	Private, religious	Public	Private, religious
Location Population	11,000	100,000	>5,000,000
Campus Population	1,900	29,000	5800
Engineering Undergraduate Population	180	600	500
Engineering Faculty	8	30	29

Survey Instrument

The survey instrument for students consists of three questions, described in this work as Part One, Part Two, and Part Three. Each are detailed 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, Student Survey

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 Bowers[29] 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)
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

Part Two, Student Survey

Part Two of the student instrument uses a more detailed list of twenty behaviors. 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 listed here in bold to facilitate the presentation and discussion of results. In the instrument, only the full descriptions are presented to the respondent.

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 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. Multiple items are allowed to have equivalent ratings. 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". 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. For the faculty version, the scenarios are presented in generic third person: "A student copies..."

Part Three, Student Survey

A final exit segment in the student instrument asks whether and from what source the respondent has been informed of their institution's academic integrity policies. Students respond to a 4 point Likert scale labeled with "N/A", "Learned a Little"," Learned a Bit But Not a Lot", or "Learned A Lot" from each of the following 6 sources: introduction to engineering course, faculty (either in class or from syllabus), university website, student handbook, other students, or other, please explain.

3 Results and Observations

A total of 115 students and 18 faculty responded to the AY 2016-17 survey request. For clarity and consistency of discussion, any comparative lists will be consistently presented in the order AAU, BBU, and CCU. There were 46, 36, and 33 student responses and 4, 10 and 4 faculty responses from the three institutions. This paper will present comparisons between the three institutions and between the two years of data collected for the one of the institutions. 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 studies[29]. 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. Figure 1 presents the results from Part One. The most common behavior is using unauthorized sources like Chegg.com or a solutions manual for homework solutions, with about two-thirds of all students reporting having done so at least once (63%, 62%, and 68% respectively for AAU, BBU, and CCU). This unauthorized aid on homework assignments is also the only item with a sizable number of respondents indicating they have done so "Many Times" (5%, 8%, and 10%).

The first four of the nine behaviors relate to dishonesty during testing, and Figure 1 clearly shows that the test related items are the lowest reported incidences. The worst reported number (CCU, using unauthorized materials), indicates that 68% of students have never cheated in that manner. For all institutions, fewer students reported direct copying or helping someone else cheat during a test. For these items related to testing, the results for AAU and BBU are more closely aligned to previously reported percentages for institutions with honor codes, and CCU is aligned to results from the institutions without an honor code[30]. Only AAU has a formal honor code, but BBU has an ongoing effort to increase awareness of academic integrity.

The remaining items in Part One (7-9) relate to written work or other general assignments. More than half (56%, 52%, 63%) admit to collaborating when doing so was not allowed, which is a somewhat higher percentage that previously reported[30], even in schools with no honor code in place. The most recent study reported in that summary work of McCabe is from 1996, which was still before the real shift to ubiquitous internet and resources like Chegg.com. Certainly unauthorized copies of solutions manuals were acquired before the age of sufficient bandwidth to allow for easy free sharing of files, but securing such resources required more than a few mouse clicks of effort. The push in recent years for collaborative work in K-12 education and ease of access to internet resources are factors that may account for the higher reported incidence rates than reported previously by McCabe.

Part Two: Comparison of three institutions

Part Two of the survey has 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 can highlight areas that are in need of clarification to reduce the

magnitude of the so-called ethical gray area.

Figure 2 is a box plot presentation of the responses separated by institution. The median response for each of the twenty scenarios for each of the three groups 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 2 provides the overview of all results for all twenty scenarios.

First, the discussion will examine instances of consensus between all three institutions. Consensus is strongest on the two negative controls, with both 3:*Writing-quoted with citation* and 14:*YouTube to study* having a reported zero median and one of the testing cases (19:*Exam-mobile device*) reporting medians of 100 with low IQR. Scenario 18:*Exam-peek and change*, also reports medians of 100 from all three institutions, but higher IQRs. Some students are at least slightly more comfortable with glancing at a peers paper than with risking the use of a mobile device in a testing situation. Besides these extreme cases, only scenario 4:*Writing-patchwork plagiarism* indicates consensus in median ratings, as indicated by all three medians falling within the 95% CI ranges for all three institutions. This consensus is also evident in Figure 4, which shows the *difference* in median ratings between students and faculty of each group.

The discussion of Figure 2 and the existence or absence of consensus continues with Scenario 13:*Multiple submission*. AAU students rated this behavior as significantly (and drastically) lower than the other two schools. An examination of the text of the AAU honor code does include references to not using work from prior semesters as reference unless specifically authorized to do so, but does not define "Multiple Submission" by name or in spirit as an academic integrity violation. Though neither BBU or CCU have formal honor codes, the academic integrity policies of both BBU and CCU specifically define multiple submission as a unique offense. This difference in focus and phrasing between the three institutions may account for the drastic difference noted.

In no case are the responses for all three institutions shown in Figure 2 distinct from one another. Two scenarios for which one institution's response is significantly distinct are 1:*Writing-verbatim, no citation* and 16:*Take home-peer help*. In order to highlight those specific results for comparison, Figure 3 compares related results for the most fitting category from the nine questions in Part One and the specific scenario in Part Two. For Scenario 1:*Writing-verbatim, no citation*, shown in the left pair of stacked bar results in Figure 3, AAU rates the behavior as significantly less severe than BBU and CCU (reported medians 75, 100, 100). An examination of the number of reported times students have engaged in this behavior at least once reveals that AAU has only a slightly higher overall rate (32%, 19%, and 28%), but both AAU and BBU have a higher relative proportion reporting responses of 3 or 4, where 4 indicates engaging in the behavior "Many Times". The right pair of stacked bar results in Figure 3 show the responses for Scenario 16:*Take home-peer help* compared with the self reported participation item from Part One of "Collaborating on an assignment when the instructor asked for individual work". Admittedly, the scope of the Part One question is broader than the testing scenario in Part Two, but the number of responses rated 3 and 4 (5%, 16%, and 28%), indicating more frequent participation, are consistent with the median reported severity ratings in this case (90, 85, 50).

Comparison of students and faculty

Figure 4 highlights the degree of consistency between the institutions when comparing the disconnect between student and faculty perceptions of these behaviors. This figure displays the *difference* between the median values for students and faculty for each institution. It should be noted that these difference graphs are only a graphical representation with no indication of statistical significance of the differences. In a number of cases, AAU faculty (red triangles) clearly consider some items more severe: Scenarios 2:*Writing-verbatim, with citation*, 9:*Download book*, 13:*Multiple submission*, and 17:*Exam-peek but do not change*. Faculty at both AAU and CCU report that 20:*HW-online solutions* is more severe.

Comparison of freshmen and upperclassmen

Figure 5 shows the difference for each of the twenty scenarios between the median reported response for freshmen and upperclassmen at each institution. Note that number of freshmen are ($n = 10, 7, 6$) and the number of upperclassmen are ($n = 32, 19, 20$). The interesting feature here is that AAU and BBU freshmen perceive most of the scenarios as more severe (red and purple markers with negative differences), indicating a relaxation of the moral code with time, whereas at CCU, the opposite is true . The younger students at CCU rate the scenarios as less severe, and indicated by the majority of blue markers having positive values for differences. Although lacking in sample sizes for statistical power, another anecdotal metric to represent this phenomenon is a mean of all of the median ratings for each subgroup. For the freshmen, those values are 54, 57, and 33, while for upperclassmen the same metric is 49, 49, and 52. This represents an overall small decline (54 to 49) for AAU, a larger decline (57 to 49) for BBU, and a marked increase (33 to 52) for CCU students as they progress from freshman year to upperclass rank.

Part Three: Source of Academic Integrity Information

This part of the survey polls respondents for the source of their information regarding academic integrity. Figure 6 is a set of stacked bars that represent the responses. Students were provided a 4-point Likert scale labeled with “N/A”, “Learned a Little”,“ Learned a Bit But Not a Lot”, or “Learned A Lot” from each of the following 6 sources: introduction to engineering course, faculty (either in class or from syllabus), university website, student handbook, other students, or other, please explain. Clearly, faculty are the primary source reported, followed closely by the introductory engineering course. Although the number of free response answers provided to the “Other, please explain” item were minimal, the answers “family” and “common sense” were both reported multiple times.

Comparison of two subsequent years at the same institution

The number of student responses was 72 for the first year and 36 for the second.

Figure 7 is the same box plot format used for the institutional comparison and Figure 8 displays the differences in the medians. The differences show a concerted trend towards the 2017 results rating nearly all scenarios as more severe than in 2016. It should be noted, however, that according to overlap of the 95% confidence intervals (x markers on the boxplot), only the differences for Scenarios 8:*Figure-copy, no citation*, 12:*Exam-ask earlier section*, 13:*Multiple submission*, and 15:*Take home-internet help* demonstrate significance. Nonetheless, these results

may indicate that the concerted effort underway at that institution may be effectively increasing awareness of academic integrity issues.

4 Concluding Remarks

Taken together, these results highlight some important commonalities and differences between the three sites compared in this investigation. Generally, results for AAU, which has an established honor code, and BBU, which does not have an honor code, but has a concerted effort underway to establish a strong culture of ethics, are consistent with previously reported results for institutions with honor codes in place. Results reported by CCU are largely consistent with other previously reported non-honor code schools. The shift in perspective with age for CCU shows a notable (and unexplained) increase in the overall perception of severity, while the results for AAU and BBU both demonstrate a moderate softening of perceptions. The fact that faculty are the primary source for students to get academic integrity information underscores the faculty members' responsibility to understand and minimize the misconceptions and discrepancies in interpretation. Making the expectation that ethical behavior is expected, and clarifying exactly what ethical behavior entails sets up for the success of the young engineers who graduate from these programs. Moving forward, the investigators intend to continue to add sites and continue longitudinal data collection at existing sites.

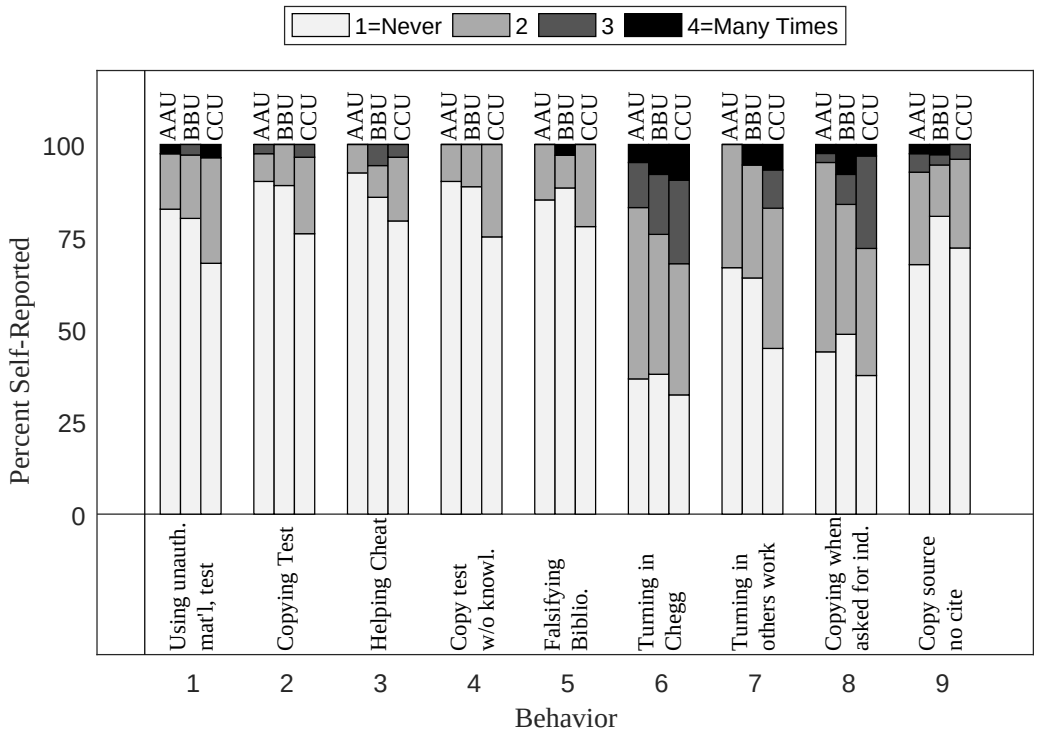

Figure 1: Percent of respondents from each site with the self reported frequency of having participated in nine types of academic dishonesty. This question is intended to mimic the work of Bowers and McCabe[29].

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)
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

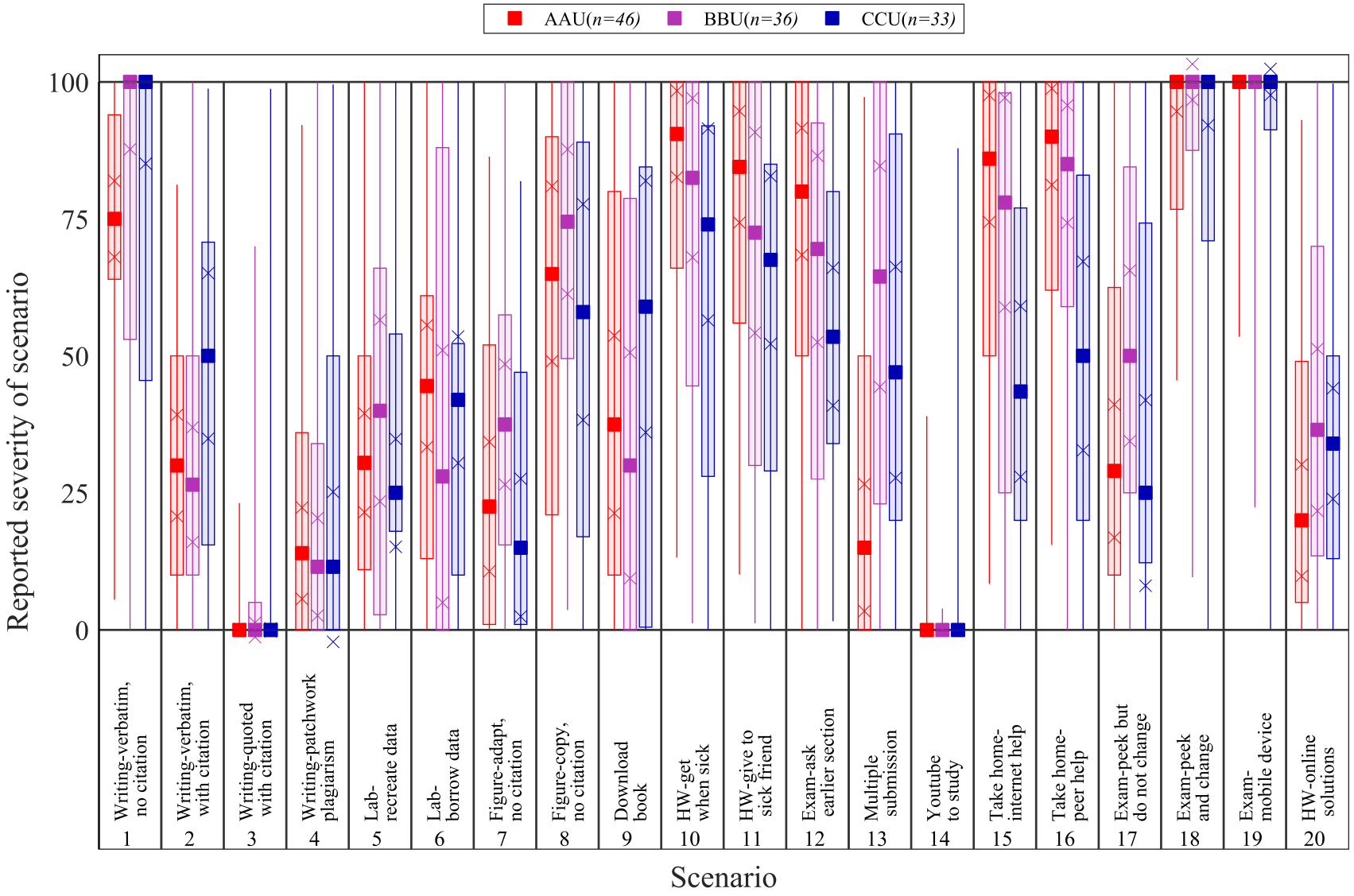

Figure 2: Reported severity of twenty academic integrity scenarios. The median value is represented by the filled square. The interquartile range is represented by the filled bar. The whisker line extends to the 2.5 and 97.5 percentile. The x markers indicate the 95% confidence interval of the medians. The three study groups (AA, BB, and CC Universities) are represented according to color. The twenty scenarios are listed in Table A2.

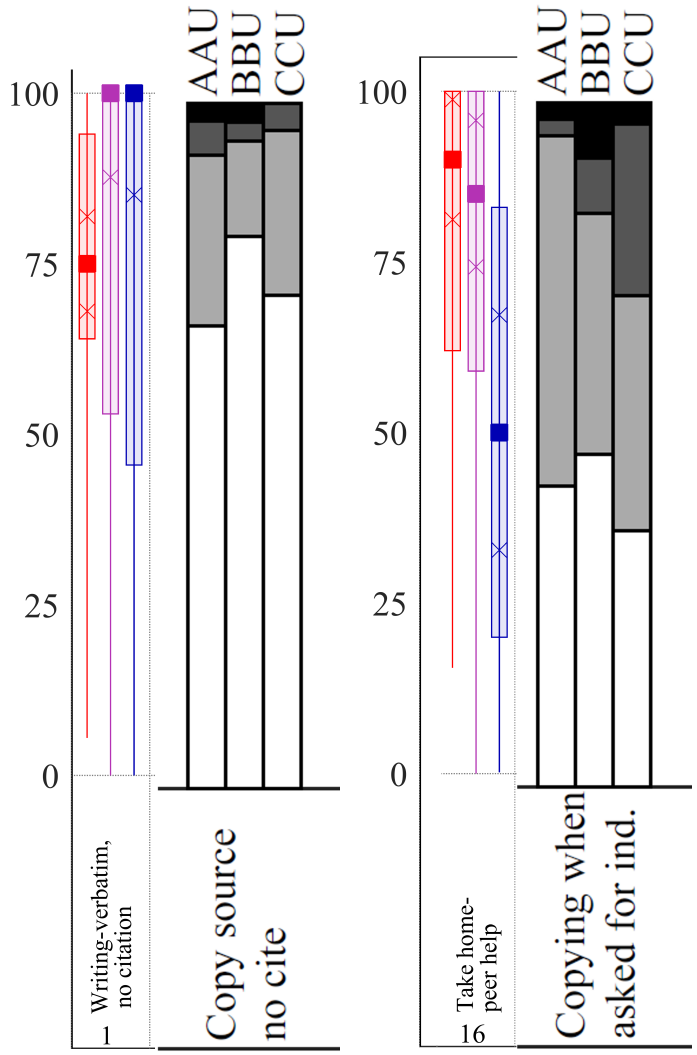

Figure 3: Two specific scenario comparisons singled out for ease of discussion.

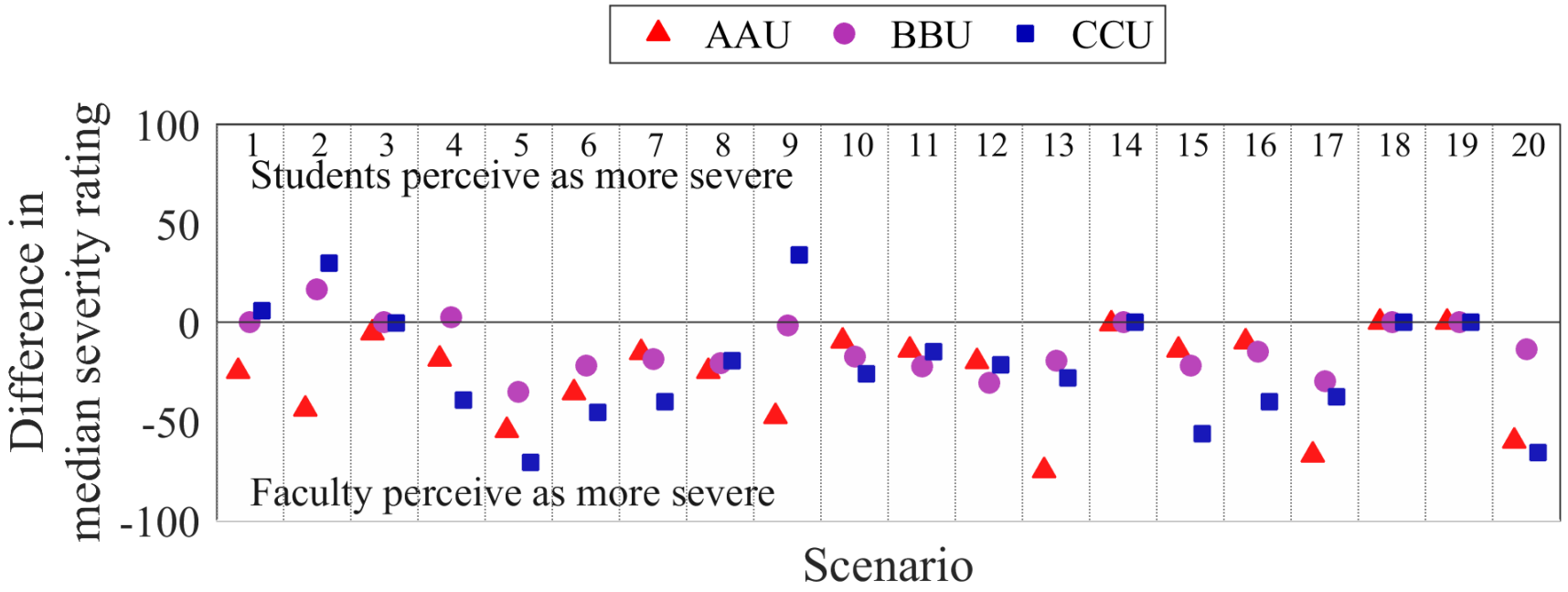

Figure 4: Difference in medians of reported academic integrity severity for twenty scenarios. This plot reports the difference between the faculty and students for AAU, BBU, and CCU. The twenty behaviors are listed in Table A2.

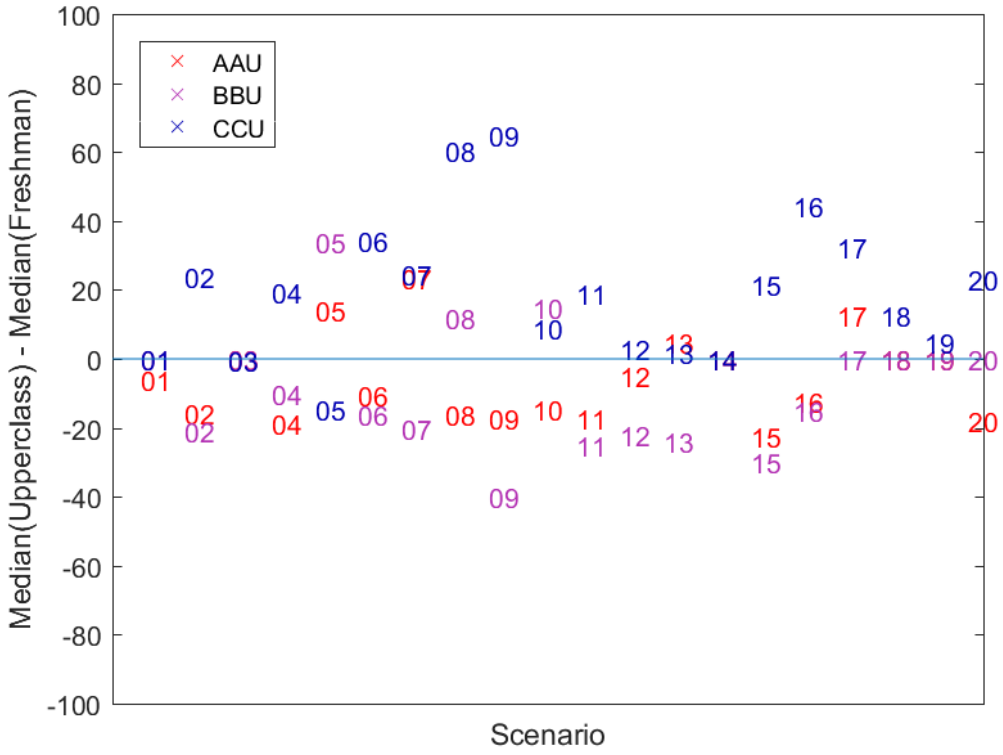

Figure 5: This plot displays the difference between freshman and upperclassman responses AAU, BBU, and CCU for each of the twenty behaviors are listed in Table A2.

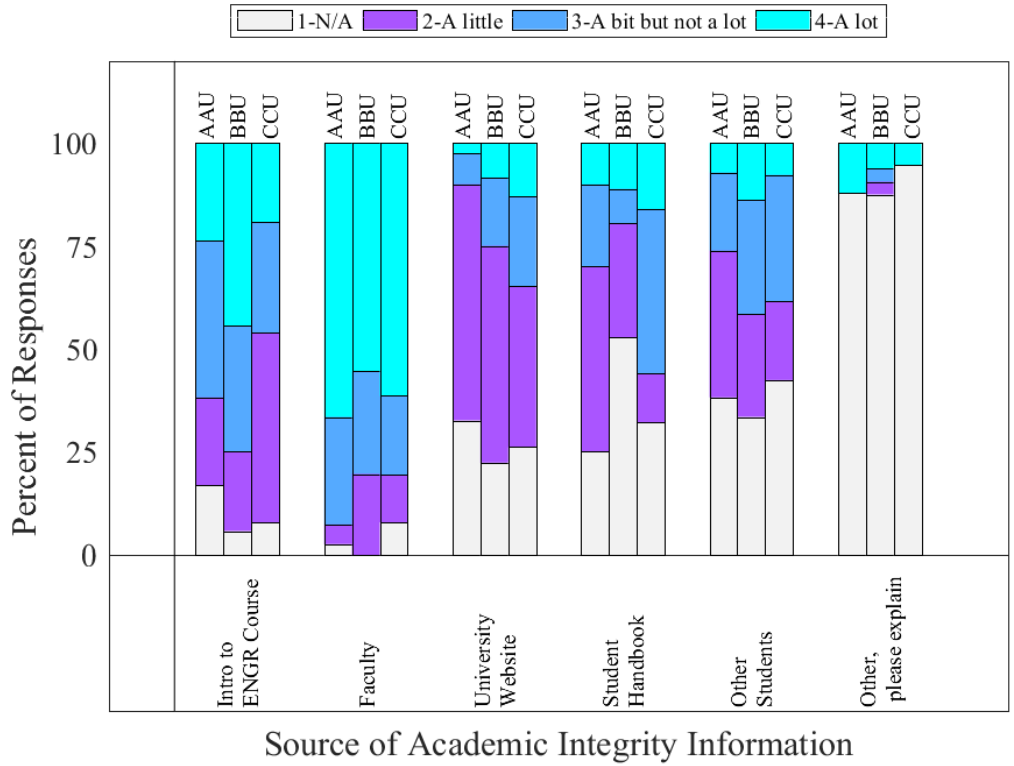

Figure 6: This plot displays the difference between freshman and upperclassman responses AAU, BBU, and CCU for each of the twenty behaviors are listed in Table A2.

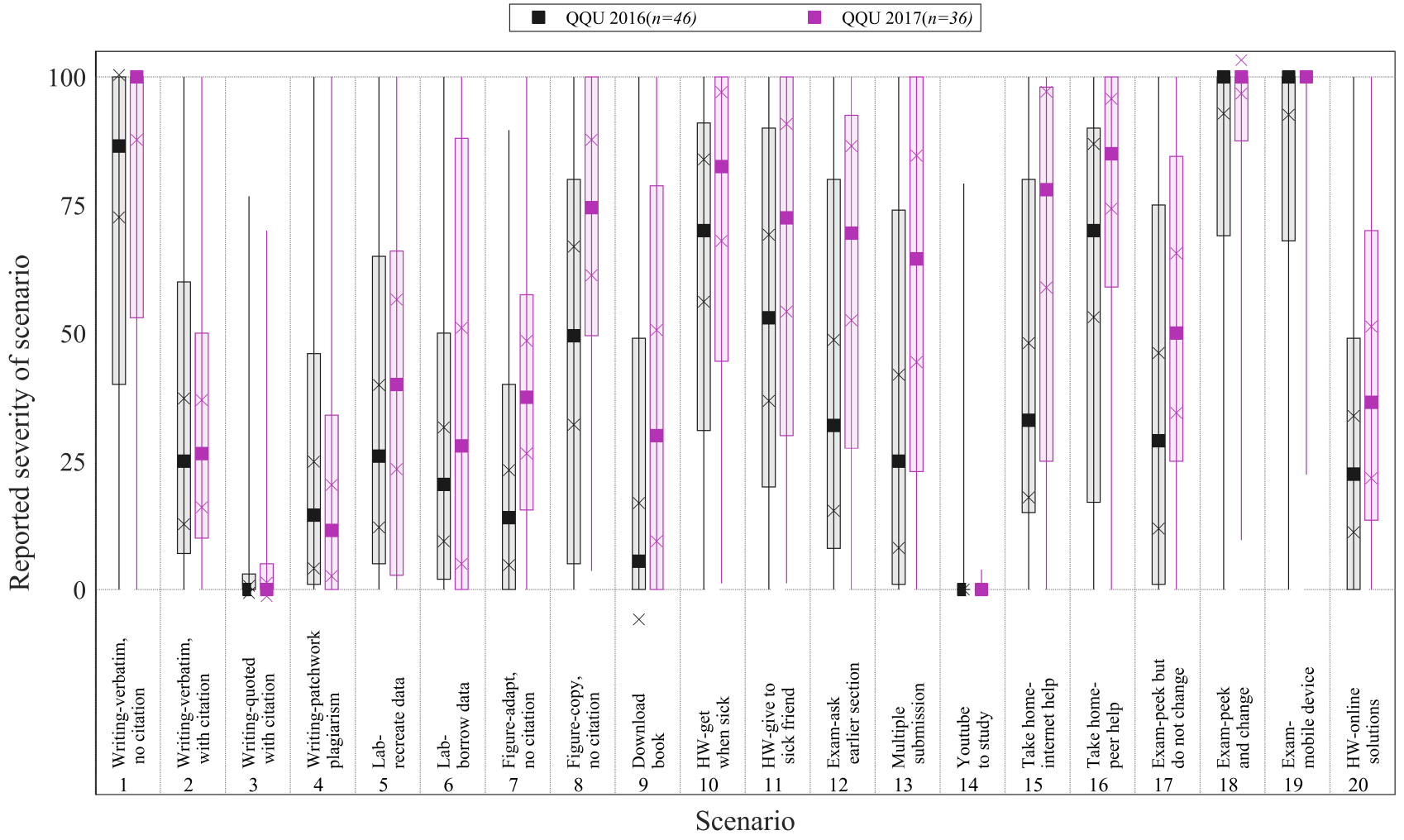

Figure 7: Reported severity of twenty academic integrity scenarios during two subsequent academic years at the same institution. The median value is represented by the filled square. The interquartile range is represented by the filled bar. The whisker line extends to the 2.5 and 97.5 percentile. The x markers indicate the 95% confidence interval of the medians. The two years of administration are represented according to color. The twenty scenarios are listed in Table A2.

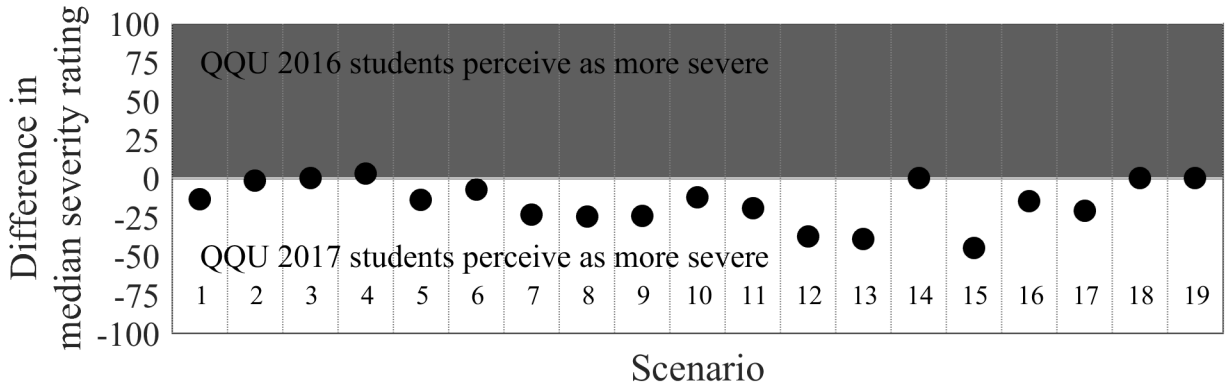

Figure 8: Difference in medians of reported academic integrity severity for twenty scenarios. This plot reports the difference between the medians of the 2016 and 2017 administrations of the instrument. The twenty behaviors are listed in Table A2.

References

[1] Blanche E. Atkins and Ruth E. Atkins. A study of the honesty of prospective teachers. *The Elementary School Journal*, 36(8):595–603, 1936.

[2] C. O. Mathews. The Honor System. *The Journal of Higher Education*, 3(8):411, November 1932.

[3] Lene Arnett Jensen, Jeffrey Jensen Arnett, S. Shirley Feldman, and Elizabeth Cauffman. It's Wrong, But Everybody Does It: Academic Dishonesty among High School and College Students. *Contemporary Educational Psychology*, 27(2):209–228, April 2002.

[4] Michael Kerwin. Cheating epidemic? *Denver Post*, June 2013.

[5] Emily Hendricks, Adena Young-Jones, and James Foutch. To Cheat or Not to Cheat: Academic Dishonesty in the College Classroom. *LOGOS: A Journal of Undergraduate Research*, 4:68–75, 2011.

[6] E. Mavis Hetherington and Solomon E. Feldman. College cheating as a function of subject and situational variables. *Journal of Educational Psychology*, 55(4):212, 1964.

[7] David A. Rettinger and Yair Kramer. Situational and Personal Causes of Student Cheating. *Research in Higher Education*, 50(3):293–313, May 2009.

[8] Kimberly A. Geddes. Academic Dishonesty among Gifted and High-Achieving Students. *Gifted Child Today*, 34(2):50–56, April 2011.

[9] Ashvin Parameswaran and Poornima Devi. Student plagiarism and faculty responsibility in undergraduate engineering labs. *Higher Education Research and Development*, 25(3):263–276, August 2006.

[10] Kevin Oh and Natalie Nussli. Locus of control, academic self-concept, and academic dishonesty among high ability college students. *Journal of the Scholarship of Teaching & Learning*, 14(4):88–114, October 2014.

[11] William J. Bowers. Student dishonesty and its control in college. *Columbia Univ., New York, NY. Bureau of Applied Social Research.*, December 1964.

[12] Donald L. McCabe and Linda Klebe Trevino. Individual and contextual influences on academic dishonesty: A multicampus investigation. *Research in higher education*, 38(3):379–396, 1997.

[13] Teresa J. Ryan, Colleen Janeiro, and William E. Howard. Perception of Academic Integrity among Students and Faculty: A Compari-son of the Ethical Gray Area. New Orleans, LA, USA, June 2016.

[14] Emily Simpson and Karen Yu. Closer to the Truth: Electronic Records of Academic Dishonesty in an Actual Classroom Setting. *Ethics & Behavior*, June 2012.

[15] John Walker. Measuring plagiarism: researching what students do, not what they say they do. *Studies in Higher Education*, 35(1):41–59, February 2010.

[16] Julia Ann Colella-Sandercock. Self-Reporting in Plagiarism Research: How Honest is This Approach? *Journal of Research Practice*, 12(2):3, January 2017.

[17] Miguel Roig. Can undergraduate students determine whether text has been plagiarized. *The Psychological Record*, 47(1):7, 2012.

[18] Miguel Roig. Plagiarism and Paraphrasing Criteria of College and University Professors. *Ethics & Behavior*, 11(3):307–323, July 2001.

[19] Spiegel Online. Plagiats-Affäre: Uni Bayreuth entzieht Guttenberg den Doktortitel - SPIEGEL ONLINE - Politik, February 2011.

[20] Andrew Kaczynski and Jim Acosta. Monica Crowley bows out of Trump administration post following plagiarism revelations. *CNNMoney*, January 2017.

[21] Alex Caton and Grace Watkins. Trump Pick Monica Crowley Plagiarized Parts of Her Ph.D. Dissertation, January 2017.

[22] Michael Anthony Vandehey, George Diekhoff, and Emily LaBeff. College Cheating: A Twenty-Year Follow-Up and the Addition of an Honor Code. *Journal of College Student Development*, 48(4):468–480, 2007.

[23] Donald L. McCabe, Linda Klebe Trevino, and Kenneth D. Butterfield. Honor codes and other contextual influences on academic integrity: A replication and extension to modified honor code settings. *Research in higher Education*, 43(3):357–378, 2002.

[24] Rodney Arnold, Barbara N. Martin, and Linda Bigby. Is There a Relationship Between Honor Codes and Academic Dishonesty? *Journal of College and Character*, 8(2), February 2007.

[25] Melody A. Graham and And Others. Cheating at Small Colleges: An Examination of Student and Faculty Attitudes and Behaviors. *Journal of College Student Development*, 35(4):255–60, 1994.

[26] Jeanne L. Higbee and Pamela V. Thomas. Student and Faculty Perceptions of Behaviors that Constitute Cheating. *Journal of Student Affairs Research and Practice*, 40(1), January 2002.

[27] Elizabeth M. Nuss. Academic Integrity: Comparing Faculty and Student Attitudes. *Improving College and University Teaching*, 32(3):140–144, August 1984.

[28] Robert T. Burrus, KimMarie McGoldrick, and Peter W. Schuhmann. Self-Reports of Student Cheating: Does a Definition of Cheating Matter? *The Journal of Economic Education*, 38(1):3–16, January 2007.

[29] Donald L. McCabe and William J. Bowers. Academic Dishonesty among Males in College: A Thirty Year Perspective. *Journal of College Student Development*, 35(1):5–10, 1994.

[30] Donald L. McCabe, Linda Klebe Trevino, and Kenneth D. Butterfield. Cheating in Academic Institutions: A Decade of Research. *Ethics & Behavior*, 11(3):219–232, July 2001.

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 [redacted])
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.