The Impact of Faculty Development Workshop on Students' Understanding of Academic Integrity

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Abstract

Academic misconduct, prevalent in universities, threatens student potential for academic and professional success. A new initiative at a large, Mid-Atlantic University to assist engineering faculty in creating classrooms of integrity provided the impetus for this study. Nine faculty members from the College of Engineering at the University participated in the initiative to redesign their course in order to create and implement plans to enhance students' understanding of academic integrity. Specific goals of the workshop included increasing the likelihood that students will practice academic integrity and illustrating links between academic integrity and professional ethics.

Using a pre/post assessment mechanism, this case study investigates how students in one faculty participant's course understand academic integrity and its importance before and after the faculty participant implemented his redesigned plans. This study serves as an initial account of students' understanding of academic integrity and why academic integrity is important. Content analysis of students' responses reveals that their responses shifted after taking the redesigned course such that responses linking the importance of academic integrity to professional ethics emerged. The results will be used to inform future academic integrity initiatives.

Introduction

Definitions of academic integrity

The Center for Academic Integrity, an association of colleges and universities, defined academic integrity as "a commitment, even in the face of adversity, to five fundamental values: honesty, trust, fairness, respect, and responsibility." They further outlined these five values in their report.[1] A search of academic integrity policies at large, research institutions yields different, but overlapping definitions. Example partial definitions include, "intellectual honesty,"[2] "honesty and responsibility in scholarship,"[3] and "honest and responsible scholarship."[4] Despite the consistency found in institutional definitions of academic integrity, there may be little consistency in the beliefs held by students and faculty. For example, while faculty see acting ethically and avoiding cheating as the same constructs, students disassociate the idea of integrity from their behaviors.[5] If instructors are to help foster academic integrity and ethics in their classrooms, then it seems that a more structured approach is needed to overcome both faculty and students' preexisting definitions.

Importance of academic integrity in engineering

The need for engineering students to have a strong ethical foundation was emphasized in *The Engineer of 2020* report which stressed the importance for engineers in 2020 to "possess a working framework upon which *high ethical standards* and a strong sense of *professionalism* can be developed." (p. 56).[6] Several studies have yielded evidence that students' behavior in the classroom forms the foundation for later professional integrity such that there was a strong relationship between self-reported prior academic dishonesty and involvement in college and later workplace dishonesty.[7, 8] Strategies to foster students' ethical development and integrity are especially needed as there is an incentive to be dishonest among engineering students given that they encounter difficult subject matter, time constraints due to workload, and a high degree of competition in their courses. Engineering instructors must underscore the larger societal role that engineers play in public safety and environmental protection when presenting engineering ethics codes, particularly since their future professional conduct can have far-reaching consequences and most first-year engineering students have not encountered these concepts before.[9] In order to achieve these goals and promote academic integrity, there is evidence that creating an "environment where academic dishonesty is socially unacceptable" is imperative.[10-12]

Effectiveness of strategies to promoting academic integrity

Due to the importance of acting with academic integrity for engineering students, approaches to promote academic integrity were explored. Prior studies have found that in institutions with cultures of integrity (where the academic integrity values are well articulated and reinforced through structures, procedures, and behaviors), students self-report less cheating, say they are less likely to succumb to pressure to cheat, and are less likely to rationalize cheating behaviors.[10] There is also correlational evidence that academic integrity is negatively associated with the perception of dishonest peers and positively associated with understanding of academic integrity policies.[10] This research lends support to the idea that students require explicit education about academic integrity.

Yet, the ways in which faculty can infuse integrity education into the classroom has not been systematically studied. Etter and colleagues proposed using the moral obligation and responsibility that engineers have for the "health, safety, and welfare" of society as a way to encourage ethical reasoning and promote academic integrity in engineering students. Suggested methods for institutions include case-based learning, cooperative learning groups, and service-based learning.[13] McCabe and Pavela suggested that faculty encourage honesty in their students by acting as role models and encouraging personal responsibility.[14] On the surface these recommended principles seem intuitive, but when instructors are confronted with implementing these recommendations in their classrooms, what action to take can become less clear. Providing instructors with a framework and support system to translate academic integrity and professional

ethics principles into practice in their undergraduate engineering courses was the goal of this research.

Research questions

Given that there are gaps in the literature, particularly with respect to students' understanding of academic integrity and effective strategies to help faculty members promote integrity in their classrooms, the purpose of this paper is to answer the following questions:

1. How do students define academic integrity before and after an intervention?
2. How do students explain why academic integrity is important before and after this intervention?
3. Do students think that the course discussions and assignments helped them understand the importance of academic integrity?
4. Do students think that the instructor emphasized the importance of academic integrity more in this course when compared to other courses?

Methods

Participants

Nine faculty members from a large research-oriented university in the Mid-Atlantic region participated in the two-day "Creating the Ethical Classroom" initiative during the summer of 2013 with the intention of implementing new curricula in the Fall 2013 semester. The faculty members represented several Penn State College of Engineering departments, including Architectural, Aerospace, Chemical, Electrical, Industrial, and Mechanical Engineering. During the course of the initiative, faculty participants redesigned their course curriculum in order to emphasize academic integrity through enhanced conversations, pedagogical changes, and assessment modifications. (For more details on the initiative, see related ASEE paper.)[15] The redesigned course curriculum was introduced in roughly 14 courses as several faculty members introduced the redesigned curriculum in two of their Fall 2013 courses. The focus of this paper is on just one of these courses—a junior-level engineering course—taught by one faculty member participant.

Faculty participant. The faculty member whose course is the focus of this study stated that while his perception of academic integrity did not change after participating in the integrity initiative, his perception of how to increase students' understanding of academic integrity did change. In order to emphasize the importance of academic integrity, this faculty member stated that he substantially changed his course syllabus such that it included a page devoted to academic integrity rather than a short paragraph, and students were asked to write and sign an academic

integrity statement on their exams. Additionally, the faculty member spent roughly 10 minutes of class time on the first day of class discussing academic integrity and reintroduced this topic throughout the course. This faculty member also discussed with students the role the professor has with respect to the five common values taught during the initiative (i.e., honesty, trust, fairness, responsibility, and respect) as well as what these terms meant for the students. Several times throughout the semester, he reemphasized the connections of academic integrity to the core values during class discussion. Further, this faculty member took additional steps to prevent cheating during exams and substantially changed his grading system such that homework was no longer graded, but served as a preparation exercise for quizzes in order to hold students responsible for their own, individual work.

Student participants. Students enrolled at Penn State and taking the redesigned courses served as the participants in this study. Demographic information (e.g., gender, ethnicity, semester standing) on the students who responded to the assessments was not collected in order to make the students feel comfortable responding to the questions as honestly as possible. Further, the questions used for the pre-assessment and post-assessment were carefully written to avoid wording that could bias the students' responses or seem accusatory. Given that this study asked students to answer questions that could be construed as sensitive, personal identifiers typically used when surveying students (e.g., student email address) were not used. Instead, the students were asked to provide which day of the month they were born and the last four digits of their phone number as identifiers so that their pre- and post-assessment responses could be compared.

Data Collection

In order to explore how students' understanding of academic integrity may have changed after the redesigned course curriculum was implemented during the Fall 2013 semester, a pre-assessment and post-assessment survey were given. The pre- and post-assessment open-ended questions were identical and included: 1) *Please define academic integrity*, and 2) *Please explain why academic integrity is important*. Students' responses were collected through Qualtrics, which is an online survey software. Likert-type items, which mainly focused on how well the course content and instructor helped the students understand why academic integrity is important, were only given during the post-assessment as the researchers were interested in course outcomes after implementing the redesigned curriculum. (See Appendix A for a complete listing of pre- and post-assessment items.)

The pre-assessment occurred at the beginning of the Fall 2013 semester, before any course material was presented. The post-assessment was given after the last day of fall 2013 classes, after all course material had been distributed. (See Figure 1 for a graphical depiction of the study timeframe.)
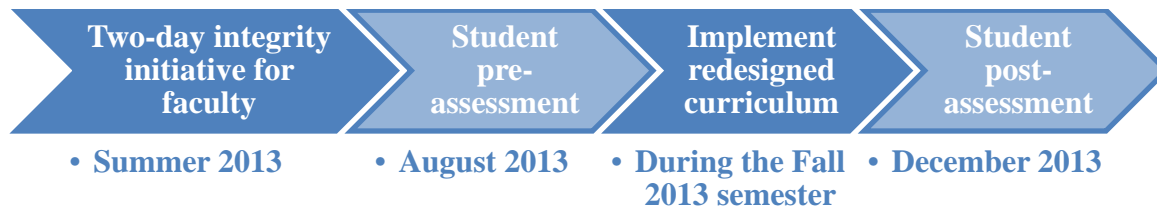
Two-day integrity initiative for faculty — • Summer 2013

Student pre-assessment — • August 2013

Implement redesigned curriculum — • During the Fall 2013 semester

Student post-assessment — • December 2013

Figure 1: Timeline of academic integrity initiative for engineering faculty, student assessments, and redesigned curriculum implementation.

Assessments were conducted in each of the 14 modified courses, but response rates varied considerably across time points. This variation resulted in a very unequal number of responses to compare, which did not facilitate identifying response shifts as there was not enough information. For example, in one course 83 students took the pre-assessment while only 13 students took the post-assessment. Students respondents in a junior-level engineering course were chosen as the participants for the analysis discussed in this paper because there were roughly the same number of respondents across time points (pre-assessment, $n = 72$; post-assessment, $n = 86$). Using the identifiers collected (i.e., the day of the month the students were born and the last four digits of their phone number), there were $n = 56$ respondents in the junior-level engineering course that could be matched on the pre- and post-assessment.

Data Analysis

Responses from one course—which is different from the junior-level engineering course analyzed in this paper—served as an example set of data for code development. This example course was selected as there were a large number of pre-assessment responses, but few post-assessment responses. Given this response rate disparity, the example course was not suitable for making meaningful time point comparisons, but could be used for code development. A graduate assistant, who did not attend the initiative and was not familiar with academic integrity research, created a coding scheme and coded all of the students' responses for this example course. First, all student pre- and post-assessment responses in example course were read and tentative codes developed to form an initial coding scheme. Second, the students' responses were read again and coded using the initial coding scheme. More codes were added as needed throughout this iterative process.

Using the coding scheme developed for the example course, the junior-level engineering student responses were then analyzed. Coding was a fluid process as more codes were added as themes not encountered in the example course emerged. Given the number of additional codes that were created, the junior-level engineering student responses were coded twice to ensure that any response shifts across time points were captured. (See Appendices B and C for a complete listing of open-ended item codes and example responses. Note: The codes and example responses listed in the appendices are based on students' responses from the junior-level engineering course

examined here, the example course used to develop the codes, as well as from other engineering courses with redesigned curriculum based on the two-day initiative.)

As previously mentioned, student respondents who could be matched across time point by using the two identifiers collected served as the data set; however, their open-ended responses were not paired (i.e., a student's pre-assessment response was not directly compared to their post-assessment response). Rather, the matched sample served as a way to more generally compare the students' pre- and post-assessment responses while reducing bias due to inconsistent assessment participation. Content analysis was facilitated using NVivo 10.[16] After the responses were coded based on content, the number of coding references for each code category were generated to obtain frequency information. These code frequencies were then compared for the pre- and post-assessment responses. Fifteen coding categories were selected for each open-ended item to highlight select findings. These categories were chosen based on the goals to discuss: 1) the most frequent pre- and post-assessment response coding categories, and 2) select coding categories to illustrate key time point differences. Similar open-ended responses will also be explored in-depth. Post-assessment responses ($n = 86$) to the Likert-type items were analyzed using SPSS 11.[17] Response frequencies for each Likert-type item were compared.

Reliability and validity evidence

Percentage agreement between the individual who created the coding scheme and coded the responses—hereafter referred to as the "coder"—and three independent scorers was used to evaluate coding consistency and reproducibility.[18] The three scorers used the coder's scheme to code a random sample of ten responses to the open-ended item that asked students to define academic integrity (see Table 1) and ten responses to the open-ended item that asked students to explain why academic integrity is important (see Table 2).

A value for percentage agreement was derived for each scorer as well as the average agreement across scorers. The percentage agreement value was calculated by taking the total number of agreed upon codes divided by total number of codes indicated by the coder. Typically, nonmatching coder/scorer codes (0, 1 or 1, 0) would be considered disagreement, but here they are treated as separate categories, disagree and missed, respectively. These separate categories were created since, when using the content analysis method employed, a coder and scorer cannot both disagree (0, 0) on how a text segment is coded. Given this, Cohen's kappa coefficient was not calculated.

- The scorer and coder agreed on a code for a text segment—agreement (1, 1).
- The scorer indicated a code and the coder did not agree with this code for a text segment—disagreement (0, 1).
- The scorer did not code a text segment that the coder did for that text segment—missed (1, 0).

Coder	Scorer A	Scorer B	Scorer C	**Average**
agreement	21/23 = 91%	20/23 = 87%	17/23 = 74%	**84%**
disagreement	1/23 = 4%	1/23 = 4%	2/23 = 9%	**6%**
missed	2/23 = 9%	4/23 = 17%	6/23 = 26%	**17%**

Table 1: Agreement, disagreement, and missed codes percentages for the item, "Please define academic integrity."

Coder	Scorer A	Scorer B	Scorer C	**Average**
agreement	16/19 = 84%	14/19 = 74%	14/19 = 74%	**77%**
disagreement	1/19 = 5%	2/19 = 11%	2/19 = 11%	**9%**
missed	2/19 = 11%	5/19 = 26%	5/19 = 26%	**21%**

Table 2: Agreement, disagreement, and missed codes percentages for the item, "Please explain why academic integrity is important."

The agreement between the coder and scorers ranged from moderate to strong (74% to 91%), which is an acceptable level of agreement.[18] When the three scorers disagreed with the coder or missed attaching a code to a text segment, they tended to be consistent in their mislabeling and omissions. The feedback from the scorers yielded valuable information for clustering coding categories in future studies.

The Likert-type items used in this study were written and reviewed by the authors such that they align with the content of the two-day initiative. These items were evaluated by experts in engineering education, educational psychology, and academic integrity.

Results

The results yielded some notable and encouraging patterns. The major themes and response shifts across the pre- and post-assessments are outlined below.

1. *How students defined academic integrity*

When students were asked to define academic integrity in the pre-assessment—before the redesigned curriculum was introduced—over half defined it *as not copying, cheating, plagiarizing, or using other's work as your own* (57%, $n = 32$). There were ten fewer responses defining academic integrity in this way on the post-assessment, after the redesigned curriculum was introduced (39%, $n = 22$). Two response codes that appeared frequently and equally often in both pre- and post-assessment were *doing your own, original work* (48%, $n = 27$) and *honesty* (34%, $n = 19$). (See Figure 2 for select response code frequencies.) (Note: Since students' responses usually contained multiple coding categories, the frequencies presented do not total 100% for each open-ended item.)

Several students characterized academic integrity on the pre-assessment as *following class rules* (7%, $n = 4$), *not sharing your work or helping other cheat* (5%, $n = 3$), and having *self-discipline, willpower, motivation, or desire* (4%, $n = 2$), but no students provided these types of responses on the post-assessment. Conversely, some code categories were created to categorize the post-assessment responses, including *being true to yourself, having your own standards* (4%, $n = 2$) and *put what was cited into your own words* (4%, $n = 2$).

Roughly twice as many students cited *responsibility, being accountable* (pre-assessment: 9%, $n = 5$; post-assessment: 16%, $n = 9$) and *doing the "right" thing (even if no one is looking)* (pre-assessment: 5%, $n = 3$; post-assessment: 11%, $n = 6$) in their post-assessment definitions when compared to their pre-assessment responses. There appears to be a shift away from defining academic integrity as simply not cheating and towards viewing academic integrity as being responsible and accountable, and doing the "right" thing.
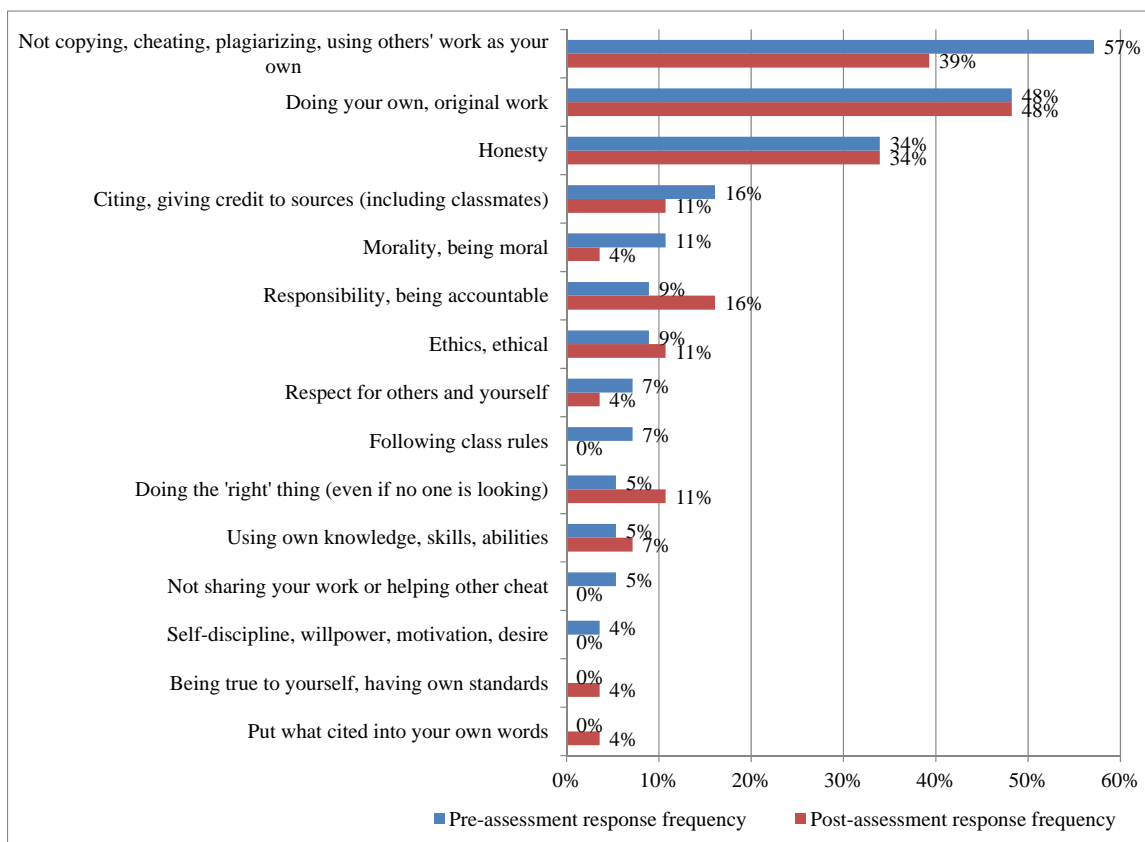

Figure 2: Student response pre-assessment and post-assessment code frequencies for open-ended item "Please define academic integrity."

There are several response types worth exploring in-depth even though they infrequently appeared in the students' responses. Specifically, these responses are of interest as they concern under what circumstances, if any, collaboration is acceptable. The responses concerning collaboration when defining academic integrity were divided into the following categories,

which appeared with roughly the same frequency at both assessment time points: *collaboration is not cheating*, *collaboration is not cheating under certain conditions*, and *not consulting/collaborating with classmates*. Further, there were not qualitative differences in responses between time points indicating that several students were still unclear about what type of collaboration, if any, is allowed. Students described what type of collaboration with peers they thought is permitted in the following pre-assessment responses:

- "Working with others is usually allowed, but the words and work must still be your own."
- "The ability to complete an assignment or task using the assets obtained in a classroom; these assets do not include asking peers for solutions."

Similarly, students tried to explain what type of assistance is allowed in the following post-assessment responses:

- "Your academic [work] is your work and no one else's. Ideas and help may have come from somewhere else, but the work and effort was yours."
- "That [your work] came from your mind or collection of thoughts of others, the latter of which when allowed."
- "One completing their work on their own with assistance from the teacher (or teacher assistant) and not copying others work."

Based on these responses, some students still seemed to be struggling with knowing when assistance is okay, and from whom, even by the end of the semester.

2. *How students explained why academic integrity is important*

When students were asked to define why academic integrity is important, there was a decrease on the post-assessment in several responses, with decreases being most pronounced in the following coding categories: *needed for learning/needed to know material and apply concepts* (pre-assessment: 32%, $n = 18$; post-assessment: 18%, $n = 10$), *honesty* (pre-assessment: 18%, $n = 10$; post-assessment: 9%, $n = 5$), and *needed so work/degree not devalued* (pre-assessment: 13%, $n = 7$; post-assessment: 5%, $n = 3$). (See Figure 3 for select response code frequencies.) (Note: Since students' responses usually contained multiple coding categories, the frequencies presented do not total 100% for each open-ended item.)

On the other hand, there was an increase on the post-assessment in several responses, most notably for the following coding categories: *needed for future career (to obtain, do well in)* (pre-assessment: 13%, $n = 7$; post-assessment: 29%, $n = 16$) and *needed for safety, legitimacy, being qualified in engineering* (pre-assessment: 7%, $n = 4$; post-assessment: 18%, $n = 10$). To a lesser

extent, coding categories *accurately reflect what you know, academic record* (pre-assessment: 13%, $n = 7$; post-assessment: 20%, $n = 11$) and *to recognize those who deserve credit* (pre-assessment: 7%, $n = 4$; post-assessment: 13%, $n = 7$) were also more often cited after the redesigned curriculum was implemented.

Additionally, the post-assessment codes *needed to advance, improve engineering and society* (9%, $n = 5$) and *hard work/not taking shortcuts/work ethic* (4%, $n = 2$) were created to capture responses not seen in the pre-assessment.
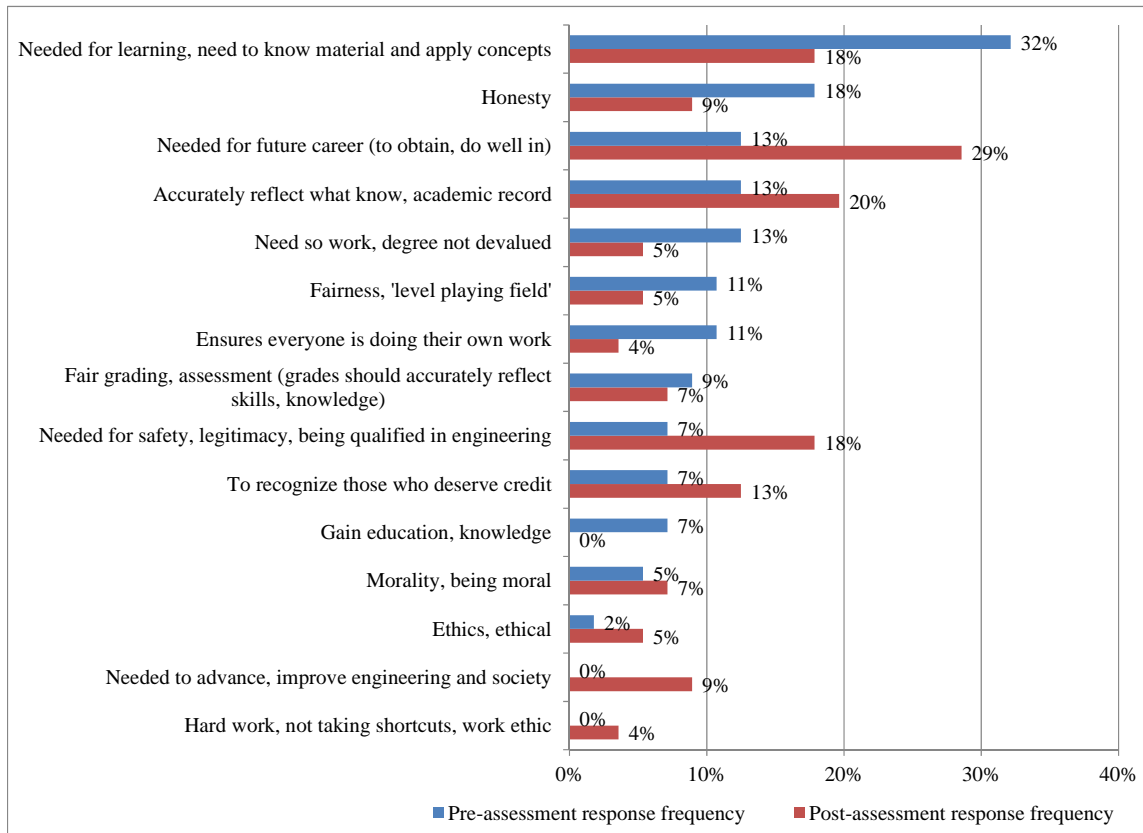

Figure 3: Student response pre-assessment and post-assessment code frequencies for open-ended item "Please explain why academic integrity is important."

Given the marked increase in students discussing the importance of academic integrity for public safety and their future career—as well as the appearance of responses concerning improving engineering and society—select responses are provided below to explore these themes in more detail.

Responses that were categorized as related to public safety/being qualified in engineering and needed for future career appeared much more frequently in the post-assessment responses. The few pre-assessment responses that discussed these issues were not qualitatively different from the related post-assessment responses, and therefore will not be considered separately here.

Example pre- and post-assessment student responses that concerned public safety/being qualified in engineering and future career include:

- It is not only important to yourself, but the world. If two pilots took a test and one passed because [they] cheat[ed] off the other, they would then be able to receive their license without knowing the proper materials and therefore could be a danger to society.
- Academic integrity and integrity itself are important because in a precarious situation where you are responsible for people's lives based on your ability, if your ability has been merely duplicated from another's, you will not be able to keep them safe.
- As engineers and professionals, our work will be critical for the safety of people. Being responsible and honest with our work now will translate in how we work in the future.
- It helps to ensure that individuals learn the material that could mean life or death for the users of whatever they work on in the future.
- It is important because the projects that we complete as engineers may cause serious danger and/or fatalities if they fail. So we have to take that into consideration when possibly skimping on a project or making sure it is complete.
- If you have a timeline to complete an engineering project and someone is pushing it through, even though it's not fully evaluated to be safe, not having the integrity to halt the project and re-evaluate it could end up costing lives.

These rich responses convey concern with several professional integrity issues, including responsibility to society, the importance of degrees being an accurate representation of knowledge and skills, and acting ethically in one's career—even if under pressure to bend the rules—as dire consequences can ensue if you do.

Only a few students discussed that academic integrity was important to "advance/improve engineering and society," and this response-type only appeared in the post-assessment responses. Examples of statement of this are:

- Academic integrity ensures that work is genuine. This can either apply to classroom as well as post-educational work. Any work produced in violation of the standards of academic integrity violates the effort to better society through the eventual application of what we learn in the system of higher education.
- As academic integrity decreases, so does the intelligence of our society.

These responses provide evidence that some students started to consider the importance of integrity beyond grades and obtaining employment as these responses reflect consideration for global and societal issues.

3. *How students rated discussions and assignments in the redesigned course (Post-assessment responses only)*

Students' responses indicate most agreed that the discussions and assignments that took place in the course helped them to understand the importance of academic integrity and why academic integrity is important for their future career. As shown in Figure 4, 87% ($n = 87$) of respondents agreed or strongly agreed with the statement "Discussions in this course helped me understand the importance of academic integrity" ($M = 4.14$, $SD = 0.82$). Students found the course assignments somewhat less successful than the course discussions as 74% ($n = 87$) of respondents agreed or strongly agreed that "Assignments in this course helped me understand the importance of academic integrity" ($M = 3.97$, $SD = 0.83$). Of note, 22% student respondents neither agreed nor disagreed that the course assignments were helpful in their understanding the importance of academic integrity while only 7% were indifferent about the helpfulness of the course discussions. Very few students strongly disagreed or disagreed that either course activity was helpful.

With respect to the students' future career, 84% ($n = 87$) of respondents agreed or strongly agreed that "Discussions in this course helped me understand why being ethical is important in my future career" ($M = 4.11$, $SD = 0.86$) while 75% ($n = 87$) agreed or strongly agreed that "Assignments in this course helped me understand why being ethical is important in my future career" ($M = 4.01$, $SD = 0.93$). As seen in the two previous items, students found the course discussions to be more helpful than course assignments. Further, slightly more students neither agreed nor disagreed about the helpfulness of course assignments (18%) when compared to course discussions (10%) in relation to why being ethical is important in their future career. Few students strongly disagreed or disagreed that these course activities were helpful in their understanding of the importance of being ethical in their future careers.
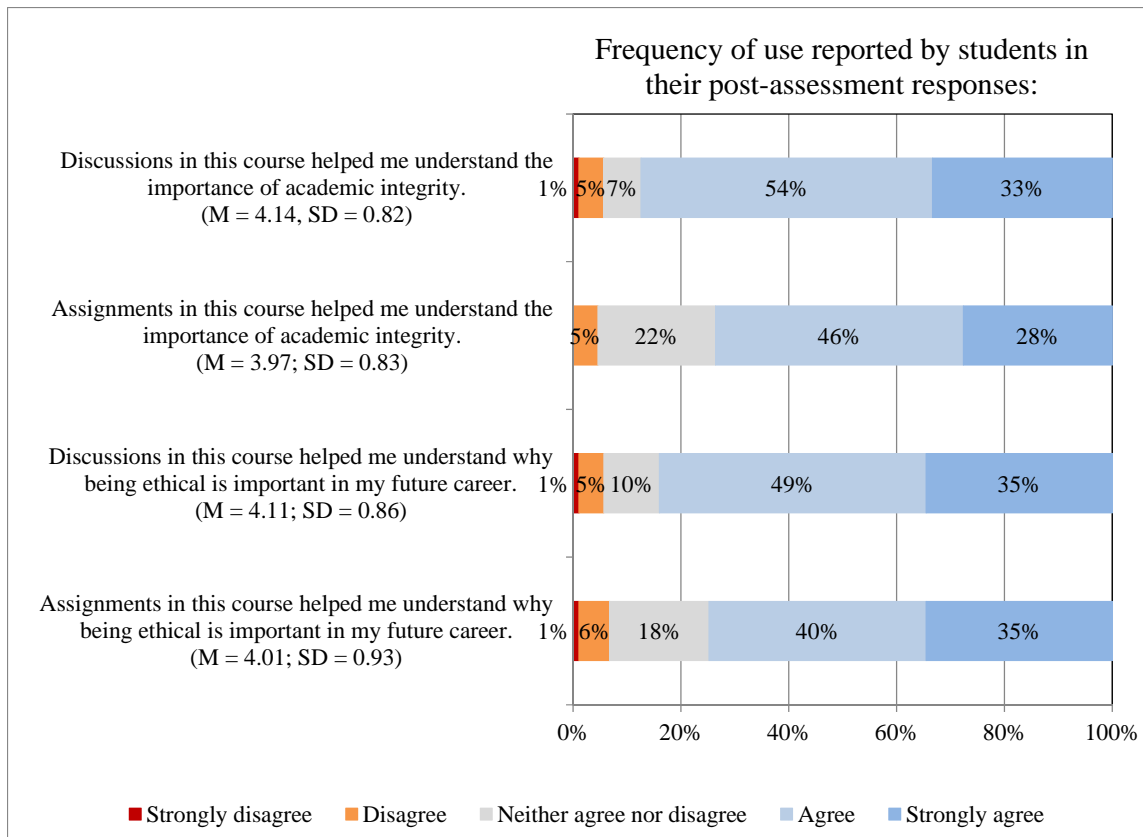
Figure 4: Likert-type items post-assessment response mean (M), standard deviation (SD), and scale frequencies.

4. *How students compared the redesigned course their other courses (Post-assessment responses only)*

Over 9 out of 10 students who responded agreed or strongly agreed that "The instructor in this course places greater importance on academic integrity than other instructors I had this semester" (*M* = 4.64, *SD* = 0.72). (See Figure 5.) Further, 75% (*n* = 87) selected *strongly agree* and only 1% selected *strongly disagree*, which is a very promising finding. With regards to the item "It seemed like academic integrity was more important in this course than in my other courses" (*M* = 4.18, *SD* = 0.92), the responses were more distributed across the options as 48% (*n* = 87) indicated they *strongly agree*, 25% *agree*, and 24% *neither agree nor disagree*. While most (56%, *n* = 87) students agreed or strongly agreed that "It seemed like cheating in this course was less common than in my other courses." (*M* = 3.79, *SD* = 0.88), a substantial proportion of respondents selected *neither agree nor disagree* (40%). Very few students selected *strongly disagree* or *disagree* when responding to this group of items.
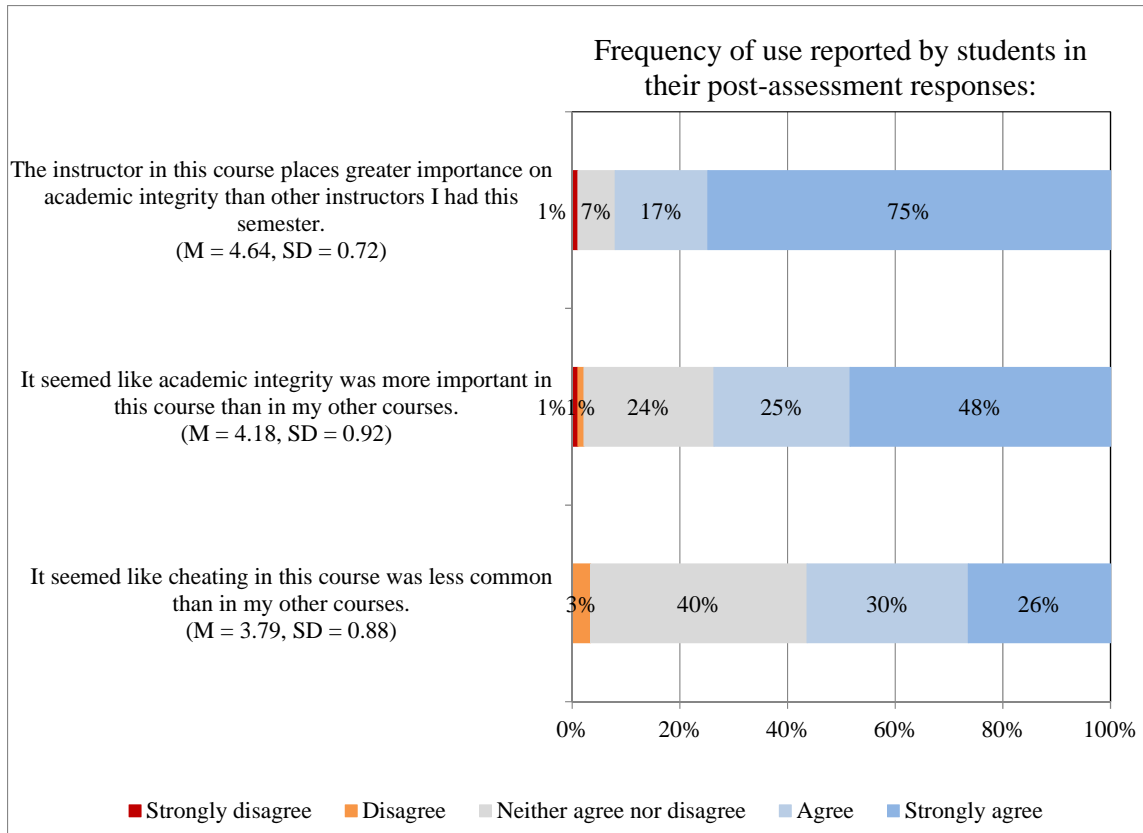
Figure 5: Likert-type items post-assessment response mean (M), standard deviation (SD), and scale frequencies.

Discussion

Academic integrity definition

The redesigned course had a greater impact on student perceptions of the importance of academic integrity than on their definitions of academic integrity. The reason for this difference and the lack of movement in definitions cannot be ascertained from this study. However, two explanations are possible. First, it could be because defining "academic integrity" is a difficult task, even for ethics and policy researchers, as it is a complex concept and open to interpretation.[19] Second, since the participants were enrolled in a junior-level engineering course, it is likely they had encountered and adopted definitions of academic integrity in previous classes. Regardless, it seems clear that students began the course with a rudimentary understanding of the concept of academic integrity.

It also is apparent from the array of open-ended responses on the definition of academic integrity that the redesigned course did not clear up student confusion about collaboration and if collaboration is academically honest. Even at the end of the course, several students still had concerns regarding whether working in teams was allowed, and if so, then under what

conditions, similar to previous research.[20] It is hypothesized that this confusion lingered for two possible reasons. First, students know that the corporate world emphasizes collaboration, and so they may wonder why the University emphasizes individual work. Second, students are exposed to a wide-range of messages concerning the acceptability of collaborative work as classroom rules (or lack thereof) can vary considerably across instructor. As McCabe stated, "In the midst of this confusion, students appear to be taking this [collaboration] decision into their own hands, especially in cases where explicit guidelines are not provided or where they see value to collaborative work even if the instructor has asked for individual work." (p. 444).[20] This finding confirms the need for faculty to explicitly address group projects and working in teams on assignments.

Academic integrity importance

One of the most surprising findings in this study was the change in student perceptions of the importance of academic integrity. Before the class began, students perceived that academic integrity was important because it helped students learn the material and apply concepts, act honestly, receive value for their work/degree, and act fairly (i.e., ensure everyone is doing their own work). At the end of the semester, students expressed that academic integrity was important because it was linked to professional and engineering ethics. This trend could be due to students altering and redefining why academic integrity is important after exposure to the course content. Indeed, there is evidence for this explanation as there was an increase in the number of students stating that academic integrity is important for their future career, to accurately represent their academic record, and to be qualified in engineering. The post-assessment responses also necessitated a new coding category concerning the importance of academic integrity for the advancement and improvement of engineering and society. Given that illustrating the link between career-related integrity and academic integrity was an overarching goal of the two-day initiative, these are both encouraging findings given the changes that were made in the course.

Trends across the academic integrity open-ended questions

As stated above, there were more pronounced response shifts across time points when students explained why academic integrity is important when compared to how they defined academic integrity. There were also several response types that appeared in answers to both open-ended items and at both assessment time points. These responses were coded under the categories *honesty*, *ethics/ethical*, and *morality/being moral*, with *honesty* being the most common of these three coding categories in students' definitions of academic integrity and explanations of why it is important. Further study is needed to determine how students define being ethical and being moral, but the authors posit that the students could have been using these terms interchangeably as no discernible difference in use could be found from the context of the students' responses.

Students' perceptions of the redesigned curriculum

The vast majority of students indicated that the discussion and assignments helped them to understand the importance of academic integrity and why being ethical is important for their future careers. However, class assignments were not perceived to be as helpful as class discussions and the reason for this disparity should be investigated in future studies. While it is not known how students would have responded to these questions if the curriculum had not been redesigned, these findings suggest that the initiative likely had a positive impact on students' understanding of the importance of academic and professional integrity. Clearly there is more work to do to reduce the number of students who were unmoved, particularly about the helpfulness of course assignments in fostering this understanding.

Most students strongly agreed that the instructor placed a greater importance on academic integrity than instructors in their other courses that semester, which provides evidence that the initiative and resulting redesigned curriculum had a positive impact. Further, while most agreed that integrity was more important in this course than in their other courses that semester, roughly a quarter of the students indicated that this course emphasized the importance of academic integrity no more or less than other courses. The impact of the redesigned curriculum on perceptions of cheating is inconclusive; half of the students agreed that cheating was less common in this course when compared to their other courses, but the other half were indifferent. This could be due to the nature of academic dishonesty—those who cheat likely conceal their actions well and so we cannot measure the impact of an intervention on cheating by asking students about cheating.

Limitations

There are several study limitations. First, pre- and post-assessment information during a semester prior to the implementation of the redesigned curriculum was not gathered; therefore, the response shifts observed could have occurred without the redesigned curriculum. For example, it is unknown the extent to which this faculty member may have stressed safety and career-related issues in their curriculum prior to participating in the initiative. Second, while the faculty member who taught this course stated that he made substantial changes to his course curriculum after participating in the initiative, including discussing academic integrity throughout the semester and taking steps to ensure that students did their own homework, artifacts were not gathered to systematically quantify these changes. Third, only one course was analyzed in-depth. Larger student response patterns across all courses are currently unknown as this was a preliminary study of the initiative. Additionally, many coding categories were created in an effort to capture as much information as possible. In doing so, broader themes might not have been as readily apparent. These categories will be merged in a larger study based on content such that the coding scheme will be more concise. Fourth, the study suffered from missing data as sample sizes were often unequal across time points. Further, pre-assessments in several courses

did not occur before the faculty member implemented the redesigned curriculum, so data was lost. Fifth, as this was a preliminary study, students were asked only several, general questions about academic integrity. The authors are currently developing additional items for future assessment administrations to obtain a deeper understanding of students' academic integrity perspectives.

Conclusions

There is limited research on the impact of integrity and ethics instruction on the actual perceptions and understandings of students. Thus, this study is an important contribution to our understanding of the role that faculty and classroom experiences play in enhancing academic and professional integrity. The changes that this faculty member made to his course after attending the two-day initiative achieved the intended outcomes. Plans for future studies include assessing students' ability to make ethical decisions after being educated on the foundations of professional integrity and ethics. Like other researchers in this area,[e.g., 21, 22] our goal is to find the key to developing in students a sense of personal and professional integrity and ethics that will lead to ethical acting as both students and engineers. This study is a valuable first step in achieving that goal.

Acknowledgement

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Appendix A: Student Assessment Items

<u>Pre-assessment items</u>

Open-ended:
1. Please define academic integrity.
2. Please explain why academic integrity is important.

<u>Post-assessment items</u>

Open-ended:
1. Please define academic integrity.
2. Please explain why academic integrity is important.

Likert-type items:
- *Strongly disagree* [1]
- *Disagree* [2]
- *Neither agree nor disagree* [3]
- *Agree* [4]
- *Strongly Agree* [5]

1. Discussions in this course helped me understand the importance of academic integrity.
2. Assignments in this course helped me understand the importance of academic integrity.
3. Discussions in this course helped me understand why being ethical is important in my future career.
4. Assignments in this course helped me understand why being ethical is important in my future career.
5. The instructor in this course places greater importance on academic integrity than other instructors I had this semester.
6. It seemed like academic integrity was more important in this course than in my other courses.
7. It seemed like cheating in this course was less common than in my other courses.

Appendix B: Define Code Definitions

Define Codes	Definition	Cluster
Being good to, bettering yourself, not cheating self	Not cheating and instead learning/doing your own work to better yourself, grades, and/or future; attain true self-worth; do your best to make the best of yourself. Example response, "The act of being a responsible student and completing one's own work so that he/she may better themselves."	Bettering self
Being, becoming successful	Being, or becoming successful academically by using own knowledge rather than copying. Moral code a student must abide by in order to achieve academic success and/or a successful life. Includes achieving academic success while being fair to other students. Example response, "To have academic integrity one becomes successful by using their own work."	Bettering self
Confidence	How confident you are in your own skills, having confidence to prove that your work is your own, and/or present work in a confident manner. Example response, "For me, academic integrity is what defines how confident you are about your own skills."	Bettering self
Freedom to pursue what want	"Each individual can freely pursue what he or she wishes in an open environment and should not be limited in any way." (Note: Only one response for this code.)	Bettering self
Needed for future career (to obtain, do well in)	So that you are fully prepared in your career, commitment to their field of study, so that can complete any job to the best of your ability. Example response, "It is being able to go out into the work [world], confident in your ability to complete any job given to the best of your ability."	Bettering self
Self-reliance, independence	Being self-reliant, self-achievement, being independent. Example response, "Academic integrity is a virtue involving self-reliance and honesty."	Bettering self
Collaboration is not cheating	Collaboration to reach an answer is permitted (e.g., valid for two or more people to assist each other in drafting and revising work or solving problems). Working together to get a homework solution with a group of people does not violate academic integrity. Using other students as resources is okay, but not directly copying their answers. Example response, "While copying answers and cheating are frowned upon and break academic integrity, collaboration to reach an answer does not break this pact."	Collaboration
Collaboration is not cheating (under certain conditions)	Use only your own thoughts, notes, ideas, or materials; exceptions included approved study groups or group projects. Working with classmates on an assignment is allowed, but only if students are attempting to learn the material and not just copying answers. Answer keys should not be used to get a good grade, but rather to review and learn the material. Example response, "Working with others is usually allowed, but the words and work must still be your own."	Collaboration

Contributing to your group	Contributing to your group projects Example response, "[Academic integrity] also means contributing to your group and not taking credit for another person's work."	Collaboration
Not consulting, collaborating with classmates	Working alone, not consulting resources, not consulting classmates or students from previous classes, and/or complete work without help from another party Example response, "The ability to complete an assignment or task using assets obtained in a classroom; these assets do not include asking peers for solutions."	Collaboration
Using permissible resources	Using permissible resources/materials to succeed academically; using resources/materials only when allowed. Variations include, "[Academic integrity is] using outside help or resources only when permitted" or "not using illegal means." Responses may attempt to define permitted resources (e.g., include homework, notes, explanations, and assistance from classmates and instructors).	Collaboration
Doing your own, original work	Wrote "doing your own work" or "doing original work." Did not use terms like copying, cheating, plagiarizing. Example response, "[Academic integrity is] the completion and submission of one's own work." Variation of these responses include, "…submitting work that is based totally on your effort."	Doing your own work
Finding a solution to a problem	Finding a solution to a problem. Need to know the concepts or the solution for the problem, not just the final answer. Participating in the act of getting the final solution; more than just getting the solution, possibly via cheating. If you cannot understand the problem, then you did not learn the concept(s). Example response, "Doing your own work and finding a solution to a problem using tools."	Doing your own work
Not sharing your work or helping others cheat	Not sharing information on a test or exam; not allowing other to copy your work, use your work to cheat; not aiding others in cheating. Example response, "Academic integrity consists of not sharing information on a test or exam to other students that have not taken the test or exam yet, giving them an advantage."	Doing your own work
Not using outside sources, influences	Completing tasks without the assistance of outside sources, not consulting resources, and/or working alone. Can include responses like, "Using only knowledge that gained in coursework."	Doing your own work
Pride in your work, feeling of accomplishment	Creating own work and having pride in it. Include pride in doing the right thing. Feeling of accomplishment in knowing that your work is truly yours. Example response, "If someone was to cheat on schoolwork they should not feel like they accomplished anything."	Doing your own work
Self-discipline, willpower, motivation, desire	Self-discipline, willpower, desire and/or resolve to do one's own work. Motivation that the student has to not cheat or give into temptation to cheat. Being disciplined about one's academic work. Example response, "Academic integrity is the self-discipline one puts on themselves when it comes to their academics."	Doing your own work

Using own knowledge, skills, abilities	Using/applying your own knowledge, skills, abilities, and/or talents. Work that reflects their personal understanding. Example response, "Academic integrity is the intention of using one's own knowledge and abilities to complete school objectives."	Doing your own work
Accurately reflect what know, academic record	To accurately reflect what know. Ensures consistency between your performance and your work. Include academic record responses: degree does not misrepresent knowledge and experience; value of degree can be determined; academic record accurately shows your achievements when enter the workforce. Example response, "If one does not have academic integrity, [then] the value of their degree is lost."	Education
Being appropriate in-class	Not being disruptive in class (e.g., behaving in a proper manner, being on time to class). Completing assignments promptly. Example response, "Disruptive behavior in the class also hinders the learning experience, and falls under academic integrity as well."	Education
Doing your best, be better student	Completing tasks to best of your ability; trying your best to be a better student; doing your best work; making your best effort. Example response, "Academic integrity means that you complete each task to the best of your ability."	Education
Instructors should have academic integrity	Instructors should have academic integrity, fairly evaluate the students, and/or be prepared to teach. Example response, "[Academic integrity is]…also the integrity of the professor to be fully prepared to teach…"	Education
Needed for learning, need to know material and apply concepts	Ensures that students learn and understand the material being taught. Trying your best to learn the material. Can include needing to know material so you can apply the concepts. Example response, "If you do not complete your work on your own, you will not learn what the teacher has planned for you to learn and that may hurt you in the long run." Responses include, "pursuing true learning" and "shows that willing to learn for the sake of knowledge."	Education
Pursuing knowledge	Pursuing knowledge. Completing your own work with intention to further/gain knowledge (e.g., completing assignments as much as can individually in order to gain as much knowledge as possible). Example response, "Academic integrity is completing your own work with the intent to further your own knowledge on a subject."	Education
Respect for academia	Respect for academia, respect for the academic system, to uphold the sanctity of knowledge and higher learning, and/or respecting the instructor and university. Example response, "Academic integrity is to respect the integrity of academia."	Education

Follow University policy	Responses include following/adhering to the rules and guidelines in the University's policy; not violating the values and principles of the University; only acting in ways that have been deemed appropriate by the institution. Example response, "Academic integrity is to not violate the values and principles of a school or university."	Guideline
Following class rules	Following class rules; using only course-approved materials; adhering to instructor's course policies and rules. Responses can include concept that it is an agreement between the instructor and the student. Example response, "[Academic integrity] entails following all class rules, especially those relating to homework completion and test taking."	Guideline
Guideline, academic standard or rules to follow, honor code	Responses include concept of following academic rules or educational guidelines. Include if response mentions: standard to keep people honest; following legal or honor code; need to follow rules and policies; guideline of how to act as a professional student. Example response, "Academic integrity is following the rules and guidelines presented by both the university and that of the acting student government."	Guideline
Also applies to outside of the classroom	Not cheating also applies to situations outside of the classroom. (Note: Only one response for this code.)	Not cheating
Being good to peers, not harming them	Not harming other students, being a good to your peers, not sabotaging others' work, and/or not increasing your grade(s) at the expense of others. Example response, "Ensuring that academic performance reflects skill and can be achieved without harming other students."	Not cheating
Citing, giving credit to sources (including classmates)	Used term "citing." Stated crediting sources and/or classmates, giving proper credit. Example response, "Completing an assignment using your own ideas and thoughts or giving credit when you use other people's ideas."	Not cheating
Not copying, cheating, plagiarizing, using other's work as your own	Used terms "cheating," "plagiarizing," "using other's work" as what academic integrity is not. Example response, "Doing all of the work yourself when expected to and not plagiarizing."	Not cheating
Put what cited into your own words	Need to go beyond merely citing sources; need to put what read into your own words. Final solution must be your own. Cannot take directly from another's work. Example response, "You usually have to put what you have read and cited into your own words while also citing your sources."	Not cheating
Reporting cheating	Reporting cheating, not allowing others to cheat, and/or obligation to expose any cheating behaviors. Example response, "With academic integrity also comes an obligation to admit or expose any wrongful behavior that you're aware of."	Not cheating

Being true to yourself, having own standards	Personal code of ethics; being true to your academic capabilities; being true to yourself; living up to and/or holding yourself to a higher standard; a person's own moral code in the academic system. Example response, "Academic integrity is the personal core values people have towards their academic [work]."	Values
Doing the 'right' thing (even if no one is looking)	Responses must include "doing the 'right' thing" or similar phrasing. May include "doing what is right even when no one else is looking." Similar responses: "Being honest/truthful regardless of who is watching." "Not cheating, even if you could get away with it."	Values
Ethics, ethical	Having ethical values, act ethically, do work in an ethical manner. It is ethical to use only your own work. Ethical agreement of a student. Example response, "[Academic integrity] means not copying others' work without citing it and taking an ethical approach to completing all assignments and exams."	Values
Fairness, 'level playing field'	Being fair or fairness mentioned. Ensuring "level playing field" in coursework. It is not giving self an unfair advantage. Being fair to yourself and classmates. Example response, "A student doing anything to give themselves an unfair academic advantage is a violation to any university's academic integrity code."	Values
Hard work, not taking shortcuts, work ethic	Response types include: Being persistent and hard-working; not taking shortcuts, especially by cheating; putting effort into your education; having a strong work ethic. Example response, "You must be persistent and work hard at your academic [studies] and do not take any shortcuts."	Values
Having a higher standard	Holding yourself and other to a higher standard when completing coursework, maintaining a professional standard. Example response, "[Academic integrity is]…holding yourself and others to higher standards when it comes to completing coursework."	Values
Holding others accountable	Doing your own work, but also hold others accountable for doing their own work. Example response, "Doing your own work while also holding others accountable to do their own work."	Values
Honesty	Being honest with my work and everything that you do. Being truthful; keeping honest. Example response, "[Academic integrity] is honesty in completing assignments/test."	Values
Morality, being moral	Being moral and/or applying moral behavior. Having morals regarding academics. Moral responsibility to have academic integrity. Moral code and/or standard to follow. Example response, "Academic integrity is morals when it comes to academics such as cheating and plagiarism."	Values

Respect for others and yourself	Response types include: academic integrity is respect; respect other people's work; respect for one's work. Example response, "Academic integrity is completing your studies with the honesty and respect that you would want anyone else to give you."	Values
Responsibility, being accountable	"Being responsible or accountable" or "having responsibility to do own work." Also includes, "to be responsible for own education, work, and/or academic career" etc. Example response, "I think of academic integrity as doing your own work and taking full responsibility for it."	Values

Appendix C: Importance Code Definitions

Importance Codes	Definition	Cluster
Being good to, bettering yourself, not cheating self	Not cheating and instead learning/doing your own work to better yourself, grades, and/or future; cheating prevents you from getting education. Example response, "Academic integrity is important because you are there to better yourself and copying/cheating won't help you do that."	Bettering self
Confidence	Allows you to have confidence; confidence about your skill set. Example response, "[Academic integrity] allows you to have confidence within yourself, which is an invaluable business asset."	Bettering self
Gain education, knowledge	Will not be able to further knowledge without academic integrity; cheating self out of potential knowledge that could have gained. Example response, "[It is] important to develop own ideas rather than take them from others as it allows you gain knowledge."	Bettering self
Needed for future career (to obtain, do well in)	Important so that you are prepared for future career. May include needing to know the concepts in order to succeed/do well in future career. Include responses that emphasize the importance of knowing the information being taught, especially in an engineering field. Example response, "If someone gets by [using] other people's work and ideas, [then] that person will not be ready to succeed in the real work place."	Bettering self
Needed for self-improvement	Allows students to improve their own performance by learning. Example response, "I believe [academic integrity] is important because it allows us to excel. If you cheat, you are only cheating yourself."	Bettering self
Needed to be, become successful	It is needed to succeed or become successful. Need to do your own work in order to have a successful career. Also, learning the course's information is the key to success in engineering. Example response, "Academic integrity is very important [since] you must learn all the information in your curriculum in order to become successful and knowledgeable when you [enter] the real world."	Bettering self
Self-reliance, independence	To learn to think on their own; rely on themselves rather than others; helps you learn to think on your own; need to be self-reliant; expected to be independent thinker. Example response, "When you cheat, you are dependent upon someone else. That person will not always be there to help you lie about what knowledge you have."	Bettering self
To avoid getting in trouble	Harsh penalties can apply if violate academic integrity; keeps you out of trouble; one could get in trouble if violate academic integrity. Example response, "[Academic integrity] keeps you out of trouble and helps you learn."	Bettering self
To keep a 'clean record'	To keep a clean record; avoid risk of failing the class; to avoid a dishonesty mark on your transcript. Example response, "[Academic integrity is important] to keep a clean record and to be successful in your academic studies."	Bettering self

Ensures everyone is doing their work	Ensures that your work is separate from others, is genuine, and/or includes original ideas. Example response, "[W]ithout [academic integrity] no one would ever do their own work..."	Doing your own work
Pride in your work, feeling of accomplishment	Important so that you can have a feeling of accomplishment; recognize your accomplishments; will have greater pride in your work. Example response, "[Academic integrity] is important because to truly learn and have a feeling of accomplishment, you must not cheat."	Doing your own work
Shows that you are capable of problem-solving	Shows you that you are capable of finding a solution to a problem; proof that you can problem-solve; shows you that you can think for yourself to solve problems. Example response, "…[academic integrity] shows that they're competent enough to complete the tasks that they are given without the use of someone else's work."	Doing your own work
Accurately reflect what know, academic record	Include if state the importance of accurately representing your educational obtainment. Example responses include: "Shows professors and potential employers what you know;" "To accurately reflect your academic record; " "Shows how you are actually doing in courses so you can see your own improvements;" "Shows the true abilities of the students."	Education
Defines legitimacy of academia, engineering program	Helps to keep the university's good academic reputation and/or maintains the name of the engineering program. Needed to keep the high-level of academics at the institution. Sends message that research produced at the university is trustworthy. Example response, "Academic integrity is important because without it, it destroys the legitimacy of academia."	Education
Doing your best, be better student	So you can do the best to your abilities; encourages you to become a better student. Example response, "…academic integrity prevents people from wasting their time in cheating and instead encourages them to be better students."	Education
Encourages thinking, intellectual growth	Encourages thinking instead of copying; helps you learn to think on your own/for yourself; prepares students to work in the intellectual community. Example response, "[Academic integrity] helps you think on your own and make your own assumptions."	Education
Fair grading, assessment (grades should accurately reflect skills, knowledge)	Response states that it is unfair to cheat. Sense of it being unfair to students who work hard when you cheat since everyone is not putting in the same effort for the same grade. Might mention that an individual's ability cannot be fairly assessed if they cheated and/or the grading system will be invalid. Example response, "[Academic integrity] is important because without it, there would be no way to fairly grade and assess how well a student is doing."	Education
Need so work, degree not devalued	Without academic integrity, the hard work of others is devalued; the value of work is diminished without academic integrity; value of degree/education will be lost. Example response, "…[academic integrity] is important because without it, the value of one's degree is lost."	Education

Needed for accurate self-assessment	Helps individuals to know what our strengths and weakness are, what one knows and what they do not know. Allows the student to know which areas they need to improve. Example response, "[Academic integrity is important] because it makes you aware of your real performance in class and the things [that] you should improve."	Education
Needed for learning, need to know material and apply concepts	Important to learn the concepts being taught. Responses include, "needed to truly/fully learn the concepts/material;" "needed to know and/or apply concepts later."	Education
Needed for safety, legitimacy, being qualified in engineering	If the student does not know the material, then this could cause dangers in future work. Critical for safety of people/society, which should be considered if a student decides to not learn the course material. Example responses include, "Ensures that individuals learn the material that could mean life or death for the users of whatever they work on in the future." "Important because the projects that we complete as engineers may cause serious danger and/or fatalities if they fail."	Education
Needed to advance, improve engineering and society	Needed to advance/improve engineering and society. If engineers merely copied other people's work, then society would not advance. Example response, "Any work produced in violation of the standards of academic integrity violates the effort to better society through the eventual application of what we learn in the system of higher education." Also can include importance of crediting work that inspired your idea(s), "Within engineering, you are constantly taking other people's ideas and improving them, but it is important to acknowledge those who contributed before you."	Education
Needed to create new ideas, creativity	Encourages students to create new ideas; builds creativity; protects the creative thinking process; need to create and think for yourself. Example response, "[Academic integrity is important as] things cannot grow and develop if new ideas are not being created—if other's ideas are presented as new."	Education
Using, can apply education	So that degree you obtain shows you understood the material and/or can apply it; falsifying your understanding robs you of your education; utilizing the skills and knowledge that is provided to you by the university Example response, "It is important that the degree you will obtain will actually show that you worked for the degree and understood the material taught to you, and that your knowledge can be applied."	Education
Guideline, academic standard or rules to follow, honor code	Provides a set of rules, guideline, academic rules, and/or morals; lying is against school policy. Example response, "[Academic integrity] is important for it provides a set of rules and morals…"	Guideline
Being good to peers, not harming them	Ensure people are not harmed by others stealing their work. Example response, "[Academic integrity] is important so that work is done honestly and no one is cheated or taken advantage of."	Not cheating

Cheating is illegal	"It is unfair and illegal to bring outcomes without effort (Note: Only one response for this code.)	Not cheating
Citing, giving credit to sources (including classmates)	Person who did the work deserves credit for it; important that people receive the credit that they deserve. Example response, "The information that you are 'borrowing' deserves credit just as much as you do, which is why academic integrity is very important."	Not cheating
Protects people's rights, intellectual property	Protects people's rights to their exclusive work/ideas; someone worked hard, and that work should not be stolen or copied; protects the creative thinking process; keeping unique ideas and intellectual property safe. Example response, "Academic integrity is important because it protects one's work from being reproduced for someone else's benefit."	Not cheating
Reduces cheating	"Academic integrity is very important because it reduces the amount of cheating by a large amount, and it also helps the student to actually learn course material." (Note: Only one response for this code.)	Not cheating
To avoid cheating, plagiarism	Because cheating on your schoolwork is wrong and/or to reduce the risk of plagiarism. Other responses included: prevents people from wasting their time cheating; eliminates cheating in the classroom. Example response, "Academic integrity is important because it shows what you're actually learning and not just cheating and copying someone's work or words."	Not cheating
To recognize those who deserve credit	Because cheating hinders/takes away from those who actually did the work; ensures that you receive proper credit for your original work/ideas; to prevent undeserved credit. Example response, "[Academic integrity] is important because it ensures that no one has an unfair advantage in completing work and that everyone gets credit for their own original work."	Not cheating
Using own knowledge, skills, abilities	Need to use your own ideas, complete assignments to the best of your ability. Need to gather your own information/establish your own knowledge. Ensures that your work includes original ideas. Example response, "Academic integrity is important because people need to think for themselves and solve their own problems."	Not cheating
Allows equal opportunity to succeed	So that all students are given an equal opportunity to succeed; so everyone can succeed. Example response, "[Academic integrity] is important so that all students are given an equal opportunity to succeed, and must put forth the same effort in each workload."	Values
Defines one's character, future behavior	Is a reflection of, defines one's character; describes one's social integrity. Example response, "[Academic integrity] shows that you are a good person…a person who does not have integrity would be a bad student and even worse employer." Includes more vague responses like, "Because people who work hard are not like people who don't." Related to character and morals.	Values
Doing the 'right' thing (even if no one is looking)	"It is part of honesty and doing the right thing" (Note: Only one response for this code.)	Values

Ethics, ethical	Mentions ethics, ethical issues, being ethical. Examples include, "Academic integrity defines ethics in everyday life." "Using someone else's work is unethical."	Values
Fairness, 'level playing field'	To create a fair learning and working environment. Ensures that people do their fair share of the work. Include if states to keep things fair to all students. Examples include, "[Academic integrity] upholds order and fairness in any learning environment." "[Academic integrity] keeps everyone on a level playing field."	Values
Hard work, not taking shortcuts, work ethic	Promotes work ethic; creates productive classroom environment; encourages hard work Example response, "[Academic integrity] develops character and prompts certain work ethics that would promote the knowledge and authenticity of an engineer."	Values
Honesty	Important that one honestly completes their work, produces honest work. Responses include academic integrity as applying morals such as honesty. May state the importance of being honest with yourself and others, including in the workplace. Response can include honesty as an important character trait to have. Examples include, "Honesty is important for all types of relationships, not just schoolwork." "Person likely to continue to be dishonest in life if dishonest in [their] schoolwork."	Values
Leadership	"Engineers are our generation's leaders, and we should be held to a higher standard." (Note: Only one response for this code.)	Values
Morality, being moral	Provides a set of rules and morals. In order for one to gain morals and values. Cheating/stealing is immoral; it is immoral to take another's work. Example response, "It is unfair and immoral to cheat or plagiarize in order to perform better in classes and on examinations."	Values
Respect for others and yourself	Show respect for other people's work. Important to respect yourself and others. Example response, "Academic integrity is important because respect is important. You need to respect others and you need to respect yourself in life if you want to succeed." May include, "The act of respecting the originality of another's work."	Values
Responsibility, being accountable	When people cheat, they are lacking in responsibility. Applying morals such as responsibility. Needed in order to become a responsible professional after you graduate. Example response, "[Academic integrity] is important because anyone can copy work from others, and if they are given responsibilities in the future and have no one to steal information from, they will be incapable of doing their job." May include, "You are responsible to learn the material."	Values
Trust, work is trustworthy	Makes a person trustworthy in their academics and other areas. Being trustworthy is a valuable quality. Student-teacher trust creates a productive classroom environment. Example response, "A strong culture of academic integrity lets everyone know that work produced at the University is trustworthy."	Values