

## **Incorporating Giving Voice to Values (GVV) into an Engineering Ethics Course**

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# **Incorporating Giving Voice to Values (GVV) into an Engineering Ethics Course**

## **Abstract**

The Department of Engineering and Society instructors at the University of Virginia recently developed a new course on Engineering Ethics aimed at second- and third-year students. Unlike previous courses in the department, the mid-level course emphasizes micro-ethics and employs the Giving Voice to Values (GVV) framework. The emphasis on micro-ethics is timely and appropriate given the polarization and plurality of views and beliefs in our nation and world and the increasingly higher stakes of engineering practice. To help students understand how they can act on their personal ethics, the course also incorporates the GVV material, originally developed for application in business settings. The GVV modules in this course were adapted specifically for use in engineering education, in collaboration with the GVV founder and the Online Ethics Center (OEC) director and are now available through the OEC for anyone to use. This paper provides an overview of the GVV portion of the new course design and discusses initial impressions from piloting the course over three semesters.

## **Keywords**

Engineering Ethics, Curriculum Design, Micro-ethics, Undergraduate Education

## **Introduction**

Engineers are fundamentally problem solvers. Sometimes engineering solutions come with ethical implications, this is what engineering ethics courses aim to help students better understand. Ethics education for engineers takes many different forms across a wide variety of institutions. As Hess and Fore attest, "... there is neither a consensus throughout the engineering education community regarding which strategies are most effective towards which ends, nor which ends are most important."<sup>1</sup> Believing that student self-awareness and the capacity to identify and effectively communicate their own values is an "end" worth pursuing, we created an engineering ethics course for that purpose. The newly adopted Engineering Ethics course at the University of Virginia introduces students to theories and principles of ethics, and normative rules, but its focus is on micro- rather than on macro-ethics. In other words, the course aims to empower students with clarity on—and the ability to express—their own values to foster productive communication and decision making.

The course is built on three major components: contemporary debates about engineering as identified in Johnson's book on the topic,<sup>2</sup> Giving Voice to Values (GVV)<sup>3</sup>, and contemporary topics of personal interest to undergraduate students. Perhaps the most unusual component of the course is the incorporation of GVV material for engineering students. GVV was originally created by Mary C. Gentile for use in business education.<sup>4</sup> It emphasizes self-awareness and

individual ethical decision making. The seven pillars of GVV are: Values, Choice, Normalization, Purpose, Self-Knowledge & Alignment, Voice, and Reasons & Rationalizations. This course was designed in collaboration with the GVV creator. It is now being piloted for adoption as a required course for all University of Virginia undergraduate engineering students. To the best of our knowledge, only one other US engineering school has begun to incorporate the GVV framework, through a pilot of GVV in the three-week orientation of Dartmouth's Capstone Engineering Design Project.

The GVV materials are available through the Online Ethics Center (OEC) for anyone to use. Faculty from other engineering schools, such as Texas Tech - Costa Rica, have accessed the course GVV modules on the OEC, suggesting that the course has the potential to be widely adopted. We hope that ASEE members will find this to be a valuable resource for instruction.

This evidence-based practice paper introduces the engineering ethics course and provides an overview of how the GVV framework may be used in an engineering context. Its purpose is to provide a framework for engineering educators who might wish to consider incorporating these GVV modules into ethics courses. It further includes the instructors' reflection on the new course and how well it is achieving its goal of equipping undergraduates with knowledge, understanding, and practice to prepare them for ethical leadership now, as students, and for their future as engineering leaders.

### *Ethics in Engineering*

The conversation about ethics has been ongoing in professional societies within the engineering profession for nearly 100 years, with some of the earliest publications in ASEE that mention ethics dating to 1981.<sup>5,6</sup> Having a code of ethics is an important step in contextualizing professional responsibility. ABET criterion three for student outcomes states that students should gain "an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts."<sup>7</sup> However, the way that higher institutions fulfill this requirement varies widely. The authors here do not suggest a uniform standardization of this criterion, but rather suggest an alternative approach to integrating ethical practices and understanding.

Previous interdisciplinary scholars have suggested that the best way for engineering students to develop skills around engineering ethics is in classrooms that are specifically dedicated to non-technical coursework, but that are still centered on engineering practice. Many foundational textbooks now exist for such courses. For example, in *Engineers for Change: Competing Visions of Technology in 1960s America*, Matthew Wisnioski focuses on engineers' struggles over social responsibility. *Engineering and Social Justice: Synthesis Lectures on Engineers, Technology and Society* by Donna Riley incorporates critical thinking and reflective decision-making skills.<sup>8,9</sup>

Another recent text that helps facilitate discussions of engineering ethics in the classroom is *Engineering Ethics: Contemporary and Enduring Debates*, written by Deborah G. Johnson.<sup>10</sup> Published in 2020, this book guides students to consider their role and responsibility in the engineering profession. The chapters are intentionally designed to discuss historical cases that are familiar to engineering ethics, such as the *Challenger* disaster, in tandem with emerging topics, such as the ethics of autonomous vehicles. Throughout these conversations, Johnson emphasizes the role of micro-ethical issues and the dynamic relationship that is necessary for individual engineers to prepare for their professional careers. The approachable writing style and reflective nature of the content make this text ideal for any level of engineering student, but it is particularly salient for first- or second-year students.

### *Giving Voice to Values (GVV)*

The GVV curriculum was pioneered by Mary Gentile, former professor with the University of Virginia School of Business, for application in business. GVV takes an “action-oriented approach” to values-driven leadership.<sup>11</sup> We selected GVV for the Engineering Ethics course because many graduating engineering students will one day step into leadership roles in business organizations. A significant body of GVV content is delivered by Gentile as pre-recorded modules, developed for a Massive Online Open Course (MOOC).

The intent of GVV is not to persuade people to be more ethical. Instead, it starts from the premise that most people want to act on their values, but also want their actions to be successful and effective. Rather than focusing on ethical analysis, the GVV curriculum focuses on implementation and teaches students to ask themselves: “What if I were going to act on my values? What would I say and do? How could I be most effective?” Students learn to do this by developing action plans and practicing scripts they compose.

The seven principles, or “pillars,” of GVV guide students through the process of thinking about what is at stake when addressing ethically challenging situations. Figure 1 summarizes the pillars: Values, Choice, Normalization, Purpose, Self-Knowledge & Alignment, Voice, and Reasons & Rationalizations.

### *Institutional Context: Ethics at the University of Virginia*

Engineering Ethics is the second course in a sequence of four courses taught by the Department of Engineering and Society that are required for all University of Virginia engineers. It follows the required first year Foundations of Engineering course that introduces basic concepts in science, technology, and society (STS) and care ethics. In the four course sequence, students explore how excellent, ethical engineering requires not just creative solutions to problems, but also careful *definition* of problems. Attending to problem definition requires understanding of the

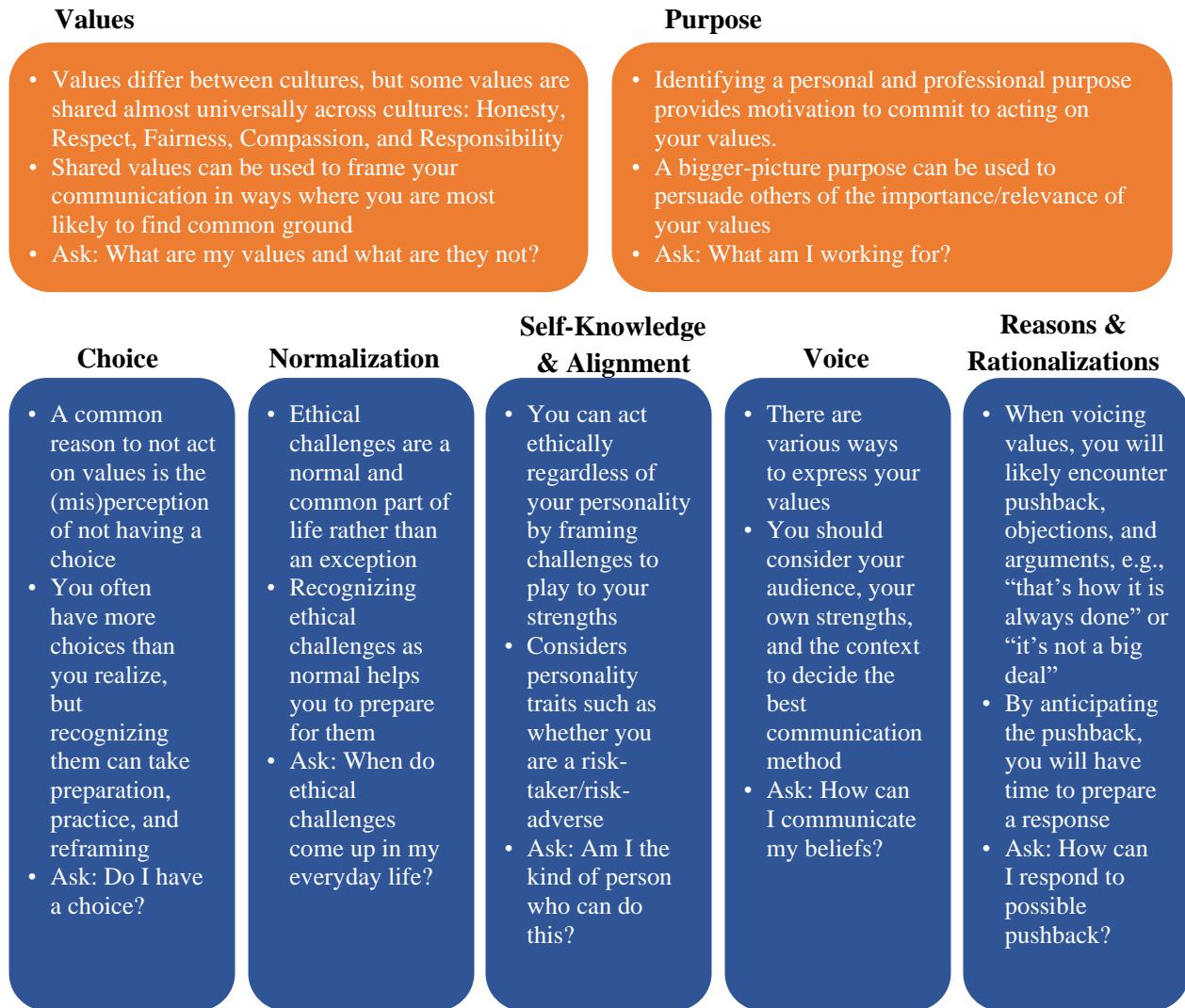


Figure 1. Summary of the 7 GVV Pillars.<sup>12</sup> The top two, values and purpose, set the stage for the remaining five pillars.

broader context in which a solution is developed and applied and is therefore inherently a process of ethical decision-making. In adopting this approach, therefore, the four courses must touch on ethics, at least indirectly.

The course sequence developed out of the early-20<sup>th</sup> century adoption of a thesis requirement for all engineering undergraduates.<sup>13</sup> Soon the school added instructors in writing, then expanded into communication, and ultimately, with the emergence of the field of Science & Technology Studies in the 1980s and 1990s, embraced a broader focus on the societal impacts of engineering practices. With the growth of interest in Engineering Ethics in the 1980s and 1990s, ethics became more central to the curriculum.<sup>14</sup>

Previously, the second course in the sequence, at the 2000 or 3000 level, addressed a variety of topics, from the history of technology, utopias, and technological society to community

development in Guatemala to LEGO as a window into engineering design and values. Each of these courses dealt with the ethical implications of engineering, but often only indirectly. The course discussed here, Engineering Ethics, takes the place of this second course and makes micro-ethics its central focus.

Engineering Ethics now sets the stage for the final two courses: STS 4500: STS and Engineering Practice and STS 4600: The Engineer, Ethics, & Professional Responsibility. Together these courses take students through the development, research, and writing of a senior thesis focused on some aspect of technology and society. In STS 4500, students learn how to develop and write a research proposal based on the idea that “success in posing and solving engineering problems requires attention to the social dimensions of professional endeavors and practice.”<sup>15</sup> Students then carry out their proposed research in STS 4600. In addition, the students spend half their semester exploring ethics and the professional responsibilities of engineers. These explorations largely focus on the macro-ethics of the professional.

## **Introducing a New Ethics Course**

### *Motivation*

In academic year 2020, a curriculum review committee, following the recommendation of an outside review committee of the Department of Engineering and Society, determined that all University of Virginia undergraduate students should be exposed to the same ethics course content, but earlier in their studies than their senior-level course. This change would ensure more consistency and common learning outcomes for graduates. Based on that recommendation, the Department of Engineering and Society developed a new ethics course, first piloted in fall 2021.

The challenge was to create a course with content that students could draw from and use while still undergraduates, and a course that would provide a strong, common foundation for their senior level thesis work. We decided to expose engineering students to both micro- and macro-ethics, focusing first on micro-ethics early in their undergraduate experience (sophomore level), then expanding their studies into macro-ethics during their senior year after students were further along in their technical studies and often had gained work experience (through internships, etc.). As Herkert explains in the abstract to his paper:

“Microethics” considers individuals and internal relations of the engineering profession; “macroethics” applies to the collective social responsibility of the profession and to societal decisions about technology.... Integrating macroethical issues and concerns in engineering ethics involves broadening the context of ethical problem solving. This in turn implies: developing courses emphasizing both micro and macro perspectives, providing faculty development that includes training in both STS and practical ethics; and revision of curriculum materials, including online resources.”<sup>16</sup>

Putting primary focus on micro-ethics in the piloted engineering ethics course provides students with the self-awareness of their values and skills to be able to voice those values during their senior capstone experience two years later. It also gives students the foundation for weaving ethics considerations into the deep dive of researching and writing their undergraduate theses.

### Course Overview

Engineering ethics courses share a common provocation: When confronted with an ethically challenging situation, how can engineers identify the choices and options that will allow them to act upon their values? The newly developed Engineering Ethics course tackles this question using four basic approaches: a.) Ethics Theory, b.) GVV, c.) Contemporary Issues, and d.) Debates. Importantly, the new course motivates students to identify opportunities to voice their perspectives, but it does not dictate for the students what those perspectives should be.

(a) First, students learn fundamentals of deontology, utilitarianism, and virtue ethics to provide them with frameworks for thinking about ethical action and character. This foundation in moral philosophy is developed further in later senior-level courses as students incorporate ethical analysis into their undergraduate theses.

(b) Once a student knows what they think is correct in a particular situation, GVV provides them with the skills to act on those values effectively. Effective and successful action involves the students knowing their own values as well as understanding the perspective and values of their interlocutors, from colleagues and peers to managers and supervisors. By seeking to understand the positions and reasoning of the other people involved in the situation, students recognize how these attitudes and assumptions motivate action and behavior. Engineering students then develop scripts and action plans to engage in the situation in ways that allow them to draw upon their own strengths. To achieve their goals and voice their values, students implement strategies that are at once attuned to them and attentive to the preferences of their interlocutors.

(c-d) Throughout the course, students explore contemporary issues in engineering practice primarily through case studies that identify specific actors and/or contexts. Students engage in debates and discussions about how to act and respond using these examples to gain familiarity with important issues in engineering and, importantly, to practice imagining how they might respond in the face of such challenges. Exploring their own intuitions and tendencies prepares students for acting on their values because they understand themselves better.

### Giving Voice to Values Module Description

After learning about major moral theories and discussing contemporary issues in engineering, Engineering Ethics students begin work on the GVV modules.

With the permission of the GVV creator, the new ethics course incorporates some of the MOOC material from the original business school offering. Through short videos that students view outside of class, Gentile introduces the GVV pillars and the goals of the module. Included in the GVV module are video interviews with engineers and businesspeople that serve as cases analyzed by Gentile and/or presented to students for them to work through in small groups. Question prompts guide students through the scenarios to identify areas of conflict and what could be said and done by specific individuals in the cases. In small groups of 3-5 students, students examine the motivations of the individuals in the scenarios and develop scripts and plans of action that would permit a particular character in the case to raise their concerns and voice their perspectives.

Beyond writing down what they could say or do to achieve their desired goals, students realistically assess the likelihood of their proposed changes. They must imagine how the other people in the case might respond, and that serves to ground their responses, balancing what is possible with what is probable. The GVV cases presented in the module demonstrate that voicing one's values may lead to the kind of change that is sought, yet students recognize that voicing values does not necessarily mean achieving every outcome they want. By aligning their values with their professional behavior and aspirations, however, the future engineers see how they can stay true to their beliefs and lay the groundwork for improved outcomes.

An example case illustrates how an early-career engineer stood up for their values in the face of professional pressures. While an undergraduate student at the University of Virginia, that student studied the Dominion Energy Atlantic Coast Pipeline project and met residents of in the Blue Ridge Mountains of Virginia who were to be directly impacted by the project. These personal encounters made the student question the ethics of the project's development. She remembered that learning experience during her first job as an engineer when she was assigned to work on a consulting project related to that same pipeline. Aligned with GVV pillars, she drew upon advice from a mentor to express her beliefs. After explaining to her manager what she had learned and what she believed, she asked to be given a different assignment. The pipeline consulting assignment would have been a feather in the cap of this early-career professional, but she knew that the project's outcomes did not align with her values. Importantly, she recognized she had a choice and told herself that, at worst, her manager would refuse her request to switch projects. Because she effectively communicated her perspectives, she was assigned to a project within the company that did align with her values. Rather than giving up and looking for new employment or staying silent and trying to align with the purposes of a particular project, she used the power of voicing her values to stay with the firm and be assigned to the projects that fuel her passion for engineering.

The Engineering Ethics course presents students with cases that challenge the values of key actors like the example above, then asks them to write alternative "scripts" and rehearse those scripts so that they can develop the moral memory of how to do so. As another example, students



read about a forester who was working as a summer intern marking boundaries for where large trees would be cut. When pressured by a more senior employee to mark a boundary outside of the legal limit, she caved and agreed to do so. Students in the class are asked to put themselves in her shoes and write a script that voices her values in that same situation.

## **Reflection from the Course Pilot**

### *Survey Data: Motivation to learn ethics and awareness of complexity*

Roughly one month into the Engineering Ethics course, but before beginning the GVV module, students completed a personal-professional profile and a survey on GVV values. Both instruments are available in the appendix of this paper. The results of this profile and survey provide a snapshot of students' attitudes and motivations before they get into the GVV module specifically and can help us understand whether students are motivated for the GVV's intense focus on micro-ethics.

Before taking the survey and starting the GVV module, the course covers theories of ethics drawn from philosophy (utilitarianism, Kantian ethics, virtue ethics, etc.), and discusses professional ethics topics such as professional ethics codes, whistleblowing, and organizational cultures of ethics. Even after covering this material—and especially after covering material like whistleblowing that can highlight negative consequences for individuals speaking up—students may remain unmotivated and unprepared to explore how they might express their personal values. One might also expect that students' motivation to study the topic could be low given that the class fulfills a “Science, Technology, and Society” requirement and that it deals with a subject matter that is both more emotionally charged than and topically distant from their technical field of study. Our goal in examining the survey data is thus to determine whether students at this point are motivated to learn more about ethics and/or if they are aware of the complexity of making a difficult ethics decision.

Several questions from both the survey and the personal-professional profile speak to the motivation of students to learn about ethical decision making. The profile, for instance, begins with a series of questions about how the student might react when their personal values conflict with those of the organization where they work. In these responses, students indicated that they would find the experience of the conflict stressful and a matter of concern, but they were more ambivalent about directly speaking up about their objections, preferring to advocate alternatives and recruit allies to help them express their concerns. We read these results as indicating that values conflicts are important to the students, and that they see themselves as wanting to address them. However, students' reluctance to speak directly might indicate a skill that the GVV module could help them develop.

A series of questions on the GVV values survey gauged students' sense of purpose in their work. Students strongly agreed that they saw themselves as doing meaningful work that contributes to

the world. We take this sense of purpose and investment in their work as strong motivation to develop their ability to express their personal values in that work.

The survey results suggest that students also enter the GVV module with a solid awareness of the complexity of making ethical decisions. For example, students tended to strongly agree that the “grey areas” are the hard part of ethics, which is no surprise, but they also tended to disagree with the idea that everyone shares the same values. In a similar vein, they rejected the simplistic idea that “it doesn’t matter what others think because I know I’m right and will stand up for my values.” Further, they rejected the idea that “understanding where the other person is coming from is likely to confuse me and weaken my resolve.” We read these results as demonstrating their openness to other ways of thinking and their recognition of the need to consider values that might be different than their own. Finally, most students agreed that “I understand the costs of voicing my values” and “I understand the costs of NOT voicing my values.” In other words, they recognize the importance and difficulty of stating their values. We take this awareness of complexity as a sign of strong moral imagination, meaning the willingness to reflect on one’s own values and be open to understanding the values of others.<sup>17</sup>

Overall, the survey results suggest that students appreciate the nuance of making ethical decisions, but they recognize, too, that they have something to learn about expressing their values. For example, though a slight majority agreed that “I have often voiced my values effectively,” the vast majority could “think of times when I did not voice my values effectively” and “would like to voice my values more often and more effectively.” This recognition that they have more to learn suggests that they are well positioned for the GVV material.

### *Instructor Impressions*

Starting in fall 2023, the new Engineering Ethics course will be a requirement for all incoming University of Virginia students. The decision to adopt the new course was informed by student evaluations, which were overall exceedingly positive. Given those evaluations, our plan is to leave the course essentially as is, with the GVV content to be taught uniformly across all sections. However, some interviews and lectures in the GVV modules use examples and stories more tailored to business students and working professionals than engineering students. To enhance this aspect of the course, we intend to perform interviews and record lectures that remain faithful to the essence of GVV, while making the content more consistently and directly about engineering. Our goal in doing so is to help students relate more to the case studies. We will also contact recent engineering alumni so that students can better understand the kinds of challenges they may face early in their careers.

### **Conclusion**

In the new course on Engineering Ethics, second- and third-year undergraduate students apply problem-solving skills to ethical problems. The GVV module does not impose a specific set of

ethical values, but rather encourages students to identify multiple perspectives and responses to scenarios. It further provides students with specific tools to apply when making ethical decisions in a systematic way similar to how technical courses provide students with tools to tackle technical problems. Engineering Ethics students also practice, through individual written responses and small- and large-group discussions, using the GVV tools to speak up appropriately and effectively. As students embark on internships and research opportunities, they will thus be better prepared to effectively communicate their values.

The Department of Engineering and Society at the University of Virginia is so far encouraged by the initial response to the newly developed ethics course and plans to expand the course offering. Future work includes a more rigorous study of how well the new course prepares students for their senior-level ethics courses and their time in the workforce.

The GVV modules we adapted for the University of Virginia Engineering Ethics course are available for use by anyone and can be accessed through the Online Ethics Center (<https://onlineethics.org/>).

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## Appendix

### GVV Values Survey

This appendix presents the 34 questions from the GVV values survey. Questions 1-17 and 24-34 are on a 5-point Likert scale from strongly disagree to strongly agree. Questions 18, 20, and 22 present dichotomous choices. Finally, questions 19, 21, and 23 are free-response. Table 1 presents the raw data for the multiple-choice questions.

1. The hardest values conflicts are in the grey areas; the "black and white" questions are easy.
2. When it comes to values conflicts, the most important thing to learn is how to analyze a difficult situation and figure out what is right.
3. When it comes to values conflicts, most folks share the same values.
4. When it comes to values conflicts, everyone has a different set of values so it is very difficult to communicate them.
5. When it comes to values conflicts, it doesn't matter what others think because I know when I'm right and I will stand up for my values.
6. When it comes to values conflicts, they are often unexpected and catch me by surprise.
7. When it comes to values conflicts, they get in the way of getting my real work done.
8. When it comes to values conflicts, they are everyday occurrences and they don't bother me much because I know how to handle them.
9. When it comes to values conflicts, I try to rush through them so I can get back to work.
10. When it comes to values conflicts, I often feel as if I don't have a choice.
11. When it comes to values conflicts, I have often voiced my values effectively.
12. When it comes to values conflicts, I can think of times when I did not voice my values effectively.
13. When it comes to values conflicts, I would like to voice my values more often and more effectively.

Table 1. Raw data for the GVV values survey presented as the number of students selecting each option and the corresponding percentage. The dark highlighted cells denote the most frequently selected response and the lightly highlighted cells denote the second most common response.

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	
<b>Strongly Disagree</b>	0 (0%)	1 (1%)	19 (12%)	1 (1%)	26 (17%)	4 (3%)	4 (3%)	7 (5%)	15 (10%)	10 (6%)	
<b>Disagree</b>	21 (14%)	27 (18%)	79 (51%)	52 (34%)	75 (48%)	61 (39%)	73 (47%)	60 (39%)	86 (55%)	80 (52%)	
<b>Undecided</b>	10 (6%)	18 (12%)	26 (17%)	28 (18%)	30 (19%)	37 (24%)	36 (23%)	33 (21%)	21 (14%)	38 (25%)	
<b>Agree</b>	96 (62%)	82 (53%)	29 (19%)	62 (40%)	20 (13%)	51 (33%)	34 (22%)	52 (34%)	32 (21%)	26 (17%)	
<b>Strongly agree</b>	28 (18%)	26 (17%)	1 (1%)	12 (8%)	4 (3%)	2 (1%)	8 (5%)	3 (2%)	1 (1%)	1 (1%)	
	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q24	Q25	Q26	
<b>Strongly Disagree</b>	1 (1%)	1 (1%)	0 (0%)	32 (21%)	1 (1%)	1 (1%)	0 (0%)	1 (1%)	3 (2%)	9 (6%)	
<b>Disagree</b>	36 (23%)	7 (5%)	4 (3%)	74 (48%)	6 (4%)	2 (1%)	6 (4%)	6 (4%)	42 (27%)	40 (26%)	
<b>Undecided</b>	26 (17%)	8 (5%)	17 (11%)	19 (12%)	24 (15%)	12 (8%)	16 (10%)	7 (5%)	20 (13%)	19 (12%)	
<b>Agree</b>	85 (55%)	113 (73%)	73 (47%)	26 (17%)	75 (48%)	86 (55%)	93 (60%)	78 (50%)	71 (46%)	69 (45%)	
<b>Strongly agree</b>	7 (5%)	26 (17%)	61 (39%)	4 (3%)	49 (32%)	54 (35%)	40 (26%)	63 (41%)	19 (12%)	18 (12%)	
	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q24	Q25	
<b>Strongly Disagree</b>	7 (5%)	0 (0%)	0 (0%)	2 (1%)	49 (32%)	9 (6%)	0 (0%)	1 (1%)	1 (1%)	3 (2%)	
<b>Disagree</b>	48 (31%)	2 (1%)	24 (15%)	27 (17%)	81 (52%)	77 (50%)	10 (7%)	4 (3%)	6 (4%)	42 (27%)	
<b>Undecided</b>	32 (21%)	7 (5%)	20 (13%)	20 (13%)	17 (11%)	39 (25%)	17 (11%)	12 (8%)	7 (5%)	20 (13%)	
<b>Agree</b>	52 (34%)	99 (64%)	71 (46%)	93 (60%)	8 (5%)	25 (16%)	108 (71%)	92 (59%)	78 (50%)	71 (46%)	
<b>Strongly agree</b>	16 (10%)	46 (30%)	40 (26%)	13 (8%)	0 (0%)	5 (3%)	18 (12%)	46 (30%)	63 (41%)	19 (12%)	
<b>Q18: I see myself primarily as an:</b>		<b>Q20: I see myself primarily as:</b>				<b>Q22: I like to primarily work:</b>					
<b>Introvert</b>	103 (66%)				<b>Risk-Taker</b>	41 (26%)				<b>On My Own</b>	69 (45%)
<b>Extrovert</b>	52 (34%)				<b>Risk-Adverse</b>	114 (74%)				<b>In Teams</b>	85 (55%)

14. I see myself as someone who would go to work to do my job, but not someone who usually thinks in terms of larger goals or meaning for my work.
15. I believe my future work will be meaningful and will make a contribution to the world.
16. I'd expect to see my role at work as important and seek to understand its impact.
17. I see myself as someone who would take time to think about what I am working for.
18. I see myself primarily as an introvert or extrovert.
19. Based on my answer to Question 18, what impact does that have on my ability to voice my values?
20. I see myself primarily as a risk-taker or risk-adverse.

21. Based on my answer to Question 20, what impact does that have on my ability to voice my values?
22. I like to primarily work on my own or in teams.
23. Based on my answer to Question 22, what impact does that have on my ability to voice my values?
24. When I have an important or difficult message to deliver, I pre-script myself.
25. When I have an important or difficult message to deliver, I practice out loud.
26. When I have had an important or difficult message to deliver, I invite trusted people to act as peer coaches.
27. I think that one has to deliver values-based messages firmly and with conviction, and they often require the ability to engage in a heated argument.
28. I think you can voice your values by asking questions.
29. When it comes to values conflicts, you never know what kinds of objections you are going to face.
30. When it comes to values conflicts, there are a predictable set of arguments you are likely to encounter.
31. When it comes to values conflicts, understanding where the other person is coming from is likely to confuse me and weaken my resolve.
32. When it comes to values conflicts, there are no good reasons/justifications for unethical behavior.
33. When it comes to values conflicts, I understand the costs of voicing my values.
34. When it comes to values conflicts, I understand the costs of NOT voicing my values.

### *GVV Personal Professional Profile*

This appendix presents the multiple-choice questions from the GVV personal professional profile survey. Table 2 presents the raw data for questions 1-7.

Questions 1-7 all have a three-point Likert scale from “Not likely at all” to “Very likely” all use the following question stem: If you find that your values conflict with those of the organization where you work, how likely is it that you will...

1. not mind too much?
2. experience it as stressful?
3. quietly handle the stress?
4. remove yourself from the situation (e.g., look for another job, transfer to another work group, etc.)?
5. speak up about your objections?
6. advocate alternative values or approaches within the company?
7. try to get others to join you in addressing your concerns?

For the remaining questions, students select either from the answer choices listed or from the two characterizations in the question stem.

8. Think of a few occasions when you encountered a values conflict in your previous experience. Recall how you handled the situations. Would you characterize yourself and your behavior as that of

- An Idealist (One who is primarily concerned with moral ideals when making decisions on how to act)
  - A Pragmatist (One who is concerned with his/her own material welfare, but also with moral ideals. "Pragmatists will gladly do their fair share to create a civil society, but not place themselves at a systematic disadvantage" to do so)
  - An Opportunist (One who is only concerned with his/her own material welfare)
9. Do you see yourself as...
    - a. Primarily risk-averse
    - b. Slightly risk-averse
    - c. Both risk-averse and a risk-taker
    - d. Slightly a risk-taker
    - e. Primarily a risk-taker
  10. Do you prefer communicating in person or in writing?
  11. Do you think best from the gut and in-the moment or do you need to take time out to reflect and craft your communications?
  12. Do you assert your position with statements or do you use questions to communicate?
  13. Who would you feel the greatest loyalty to?
    - a. Family
    - b. Work colleagues
    - c. Firm/employer
    - d. Other stakeholders, such as customers
  14. Do you see yourself primarily as shrewd or naïve?
  15. Do you see yourself primarily as an idealist or a pragmatist?
  16. Do you see yourself primarily as a learner or as a teacher?

Table 2. Raw data for the personal professional profile questions 1-7 presented as the number of students selecting each option and the corresponding percentage. The dark highlighted cells denote the most frequently selected response, and the lightly highlighted cells denote the second most common response.

	Q1	Q2	Q3	Q4	Q5	Q6	Q7
<b>Not at all</b>	42 (37%)	7 (6%)	9 (8%)	15 (13%)	17 (15%)	11 (10%)	8 (7%)
<b>Somewhat Likely</b>	62 (55%)	49 (44%)	58 (51%)	75 (66%)	72 (64%)	46 (41%)	48 (42%)
<b>Very Likely</b>	9 (8%)	56 (50%)	46 (41%)	23 (20%)	24 (21%)	56 (50%)	57 (50%)