



From education to enculturation: rethinking the development of ethical professionals in higher education

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Abstract

Despite the increase in ethics education offerings of the past few decades, universities struggle to foster desirable ethical dispositions among developing professionals. Part of the reason is that the values implicit in the enculturation of students in higher education cut against the aims of explicit ethics education. To accomplish desirable ethical dispositions among future professionals we ought to broaden our understanding of what the cultivation of ethical professionals entails from a narrow focus on ethics education to a broad focus on ethics enculturation. This paper offers a framework for theorizing ethics enculturation, using examples from recent engineering ethics education literature to demonstrate how the framework captures elements about the development of ethical dispositions and decision-making skills that literature with a narrow focus on ethics education overlooks.

Keywords Ethics education · Ethics enculturation · Professional ethics · Professional responsibility · Ethics compliance

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Introduction

The past four decades have seen a growing interest in ethics in higher education. The number of journals and articles that focus on ethics has increased along with the number of articles on ethics education that are being published in journals of higher education (Elliott and June 2018). Indicative of this proliferation of literature is the increase in the number of “peer-reviewed journals specific to disciplinary or topical areas of practical ethics, such as medical ethics, business ethics, engineering ethics, and environmental ethics [which] grew from fewer than 20 journals prior to 1980 to 145 by 2015” (p. 15).

Universities have also embraced ethics as an important component of their missions, which has been reflected in the expanded provision of ethics courses across the curriculum. This increase has been closely examined in recent scholarship that investigates the presence and distribution of ethics courses in higher education institutions. A recent large-scale national study on the teaching of ethics across universities in the United States found that ethics is taught extensively enough that “undergraduates at 30% of schools in the defined population (N=507) were required to take an ethics course, while 82% had the option to take an ethics course to meet their general education requirements” (Kim et al. 2023, p. 30). Moreover, researchers who examine “where ethics is taught” within universities have found that even when the number of total courses offered is minimal, such courses are offered by most colleges (Beever et al. 2021), indicating a diverse and wide-reaching interest in ethics beyond colleges of humanities or social sciences.

Growth in ethics interest has also been facilitated by the availability of extra-curricular interdisciplinary ethics-related learning opportunities at universities, many of which are offered by ethics centers. Such opportunities include, among other things, guest lectures and lecture series, conferences and symposia, seminars and workshops, discussion-based forums, and certificates (Safatly et al. 2017). Other opportunities are often associated with required trainings that many universities mandate to comply with governmental regulations. In the United States, for example, such compliance trainings include a variety of ethical, or ethics adjacent, issues like student privacy, sexual conduct, campus safety, copyright laws, export controls, and grants management, among others (Russell, 2023).

Despite the varied extra-curricular learning opportunities available, scholars contend that such opportunities often remain too narrow, reduced to teaching compliance and codes of conduct. Franeta (2019), for example, suggests that there is a need to broaden the scope and deepen the substance of ethics education in the field of psychology beyond the increasing focus of professional psychology organizations on codes of conduct for the profession. Geller et al. (2010) report a strong focus on regulation and compliance in the context of medicine, which comes at the expense of a focus on underlying moral reasons for those regulations and distracts from ethical issues that may arise in areas that regulation does not cover. Pinkert et al. (2023) claim that ethics education in the fields of computer science and biology prioritizes external accountability rather than personal responsibility, as can be gleaned by instructors’ focus on professional standards and codes of conduct. Polmear and Bielefeldt (2022) find that when ethics education in engineering is tied to accreditation, it is often

reduced to issues of compliance. Similar examples of excessive focus on compliance are likely to be found across disciplines given governmental mandates for scientific integrity training that bleed into non-governmental research institutions funded by the federal government (National Science and Technology Council 2022).

A further challenge to ethics education comes from well-established empirical research that shows the questionable impact of ethics education on student conduct. Notably, findings regarding the overall effectiveness of ethics education are mixed. Some studies offer discouraging results that show limited or no impact (e.g., Anderson et al. 2007; Antes et al. 2009; Schwitzgebel 2013; Waples et al. 2009), whereas others offer encouraging results that show significant impact (e.g., Schwitzgebel et al. 2020, 2023; Watts et al. 2017). Regardless of the mixed status of these findings, there seem to also be differences in the effectiveness of ethics education that track differences in the characteristics of the education provided, the populations receiving it, and the studies evaluating it (Antes et al. 2009; Mumford et al. 2015). Further, some scholars question the efficacy of approaches to and the effects of ethics education. For example, Haidt (2001, 2012) has discussed extensively the fact that moral reasoning, instead of being used to uncover moral truths, often serves the purpose of justifying one's moral intuitions and persuading others of their validity. Additionally, Schwitzgebel and Rust (2016) have shown that the conduct of professional ethicists is no better than that of laypersons.

To address these challenges, some scholars have probed into the effectiveness of different forms of ethics education to offer guidance about which forms of ethics education to prioritize (e.g., Antes et al. 2009; Medeiros et al. 2017; Mumford et al. 2015; Waples et al. 2009). These studies enable researchers and practitioners to develop more effective ethics education in professional fields. However, the question remains: What are we to make of these challenges to ethics education, and more importantly, what might be the reasons why ethics education is often ineffective?

This paper argues that part of the problem for ethics education in the professions is the very framing of this conversation in terms of ethics education. Ethics education as a term can be relatively narrow or focused on imparting particular skills through various forms of instruction. The narrow understanding of ethics education may conceal the fact that much more is involved in the process of professional moral development than a mere provision of courses, texts, and other learning resources. While the ethics education that is available to students is often reduced to simple elements of this kind, education occurs within a larger system and cultural milieu that both circumscribe moral agency and shape how students understand what it means to be a professional and what students learn about being a professional (Nieuwsma and Cieminski 2018; West and Chur-Hansen 2004).

In addressing this narrow understanding of ethics, we find promise in focusing on the broader concept of enculturation. Enculturation is holistic, capturing the whole process of education toward and initiation into a professional community. Unlike education which focuses primarily on the teacher-student relationship, enculturation focuses on the broader context in which students develop their ethical dispositions. Importantly, enculturation takes into consideration the axiological underpinnings of education and socialization, which make transparent a set of assumptions about the profession itself—including its aims and proper function within society—that can go

unnoticed and unquestioned in compliance-based professional ethics courses like the ones described above.

In this paper we aim to describe what a transition away from a focus on ethics education and toward a focus on ethics enculturation would entail. In doing so we undertake two tasks. First, we survey literature on ethics education in professional fields to show how scholarship on ethics education often embraces a narrow understanding that does not include a sufficiently broad set of relevant components of professional moral development. Second, we introduce a comprehensive framework of ethics enculturation. We argue that examining professional moral development through the lens of enculturation enables us to capture overlooked components and to reorient our educational endeavors in ways that are more conducive to individual and institutional transformation, empowering the embrace of ethical values in professional contexts. While our focus is on ethics education in STEM and professional fields, we intend this framework to be applicable to a variety of contexts.

Ethics education and the professions

Ethics education is a popular term that is often used in the literature to describe the teaching of ethics within formal educational settings like schools and universities. Of course, not all ethics education is formal. One may receive ethics education in non-formal settings like religious or community-based organizations that preach a moral code or establish expectations for service in support of one's community. One may even receive informal lessons in ethics, as when a child is scolded by their parent for doing something that harms another person. Even in formal educational settings, not all ethics education that a learner receives is formal, as in the form of coursework or seminars. Much of the "hidden curriculum" (Jackson 1990) of formal educational institutions implicitly teaches students what they ought to do even when this is not included in codes of conduct or other explicit communications outlining behavioral expectations. However, conversations regarding ethics education in the literature, especially as regards ethics education in the professions, often disregard any learning that does not occur formally. This disregard of informal learning is somewhat justified. It is much easier to fulfill a need for ethics education, and to ensure that ethics education remains consistent with the values of an educational institution, by adding ethics course offerings and requirements on the course catalog than it is to require all teachers or professors to model ethical conduct of a particular kind or to shape the environment such that every aspect of it communicates a unified and ethically grounded message. Further, it is more straightforward to *study* ethics education within formal institutional structures than it is to do so in informal and implicit contexts.

Thus, the focus on formal education is reflected in the ethics education literature which usually assumes a "triadic relation" between teacher, student, and content. In this sense of the term, education involves a teacher who teaches or at least tries to teach something—whether this something is content knowledge, a skill, or something else—to a student or group of students who either learn(s) or fail(s) to learn what is taught (Passmore 1980). The embrace of the triadic relation conception of

education is evident in the literature's focus on ethics content (the thing being taught) and pedagogical methods for teaching ethics (the ways in which the teacher communicates this content to students), especially in recent large-scale explorations of ethics education at the university level. For example, Kidd et al. (2020) frame their investigation of ethics education across the curriculum thus:

Given that ethics education may not always be explicitly labeled as such, it is critical to gain a clearer understanding of what sorts of courses instructors believe constitute ethics courses. In short, we need to know what ethics education looks like from the perspective of those who deliver it: instructors. (p. 2)

Beever et al. (2021) frame their investigation of teaching ethics-within-the-disciplines and ethics-across-the-curriculum as follows:

We are not looking at individual student experiences, and are not examining individual receptiveness to ethics, moral sensitivity, and other unique factors. Instead, we examine ethic at the community level, seeking to quantify the exposure level in term of number of courses emphasizing ethics, and where they are located across the institution by college and discipline. (p. 219)

Similarly, Kim et al. (2023) limit their paper's "scope to courses and learning outcomes... within general education programs" (p. 21) while Ongis et al. (2024), addressing the need "to identify where ethics-related teaching and learning is already happening," describe "two studies designed to test the validity of an automated method for detecting ethics-related content across academic curricula" (p. 270).

In discipline-specific forms of ethics education we observe similar trends. Hess and Fore (2018) review literature on engineering ethics education with a focus on specific courses taught and different teaching strategies involved. In a more recent literature review of engineering ethics education, Martin et al. (2021) show that the focus remains predominantly on issues of curriculum, including courses, instructional techniques, ways of assessing student learning, and students' reception of the material. The focus on the triadic relation conception of education is also mirrored in the content being prioritized, which largely focuses on "professional codes, safety and plagiarism" and leaves more substantive issues like "equity, the critical histories of ideas about engineering, the broader mission and implications of the profession, as well as the respect for life, law and public good" underemphasized (p. 11). These latter more substantive issues are the ones that tend to permeate ethics-related interactions that students have in professional spaces and that shape their outlook as budding professionals. Notably, the "multi-level" approach taken by the authors of the review considers professional culture as a value-laden factor in ethics education but it receives less attention by the literature on engineering ethics education than components pertaining to the triadic relation conception of education. Yet the focus on professional culture highlights how the hidden curriculum of engineering may be undermining what is explicitly taught in engineering ethics education (see also Tormey et al., 2015).

In medical ethics education, Souza and Vaswani (2020) reviewed a broad range of articles on the teaching and assessment of medical ethics and found that most studies emphasize concrete teaching methods like case-based instruction. A focus on non-directive approaches to ethics education like role-modelling and interactions with patients and other students was also highlighted, though it constituted a small portion of the studies reviewed. Rahim et al. (2016) similarly found that case-based instruction and discussions were the dominant mode of ethics education in the medical ethics education literature, with other explicit forms of instruction like guidelines, curricula, and learning activities also being present. Given the limited scope of the above reviews, Wong et al. (2022) conducted an expansive literature review of medical ethics education studies, which covers the past three decades. They found that the main locus of ethics education is the formal curriculum which included diverse teaching strategies like coursework (e.g., lectures, seminars, case-based instruction, and group discussion), clinical instruction, and mentorship. Notably, reference was made in a few studies to the role of the hidden curriculum, as when professionals modelled ethical problem-solving to resolve conflicts that arose when ethical conduct conflicted with official ethics teachings.

Ethics education in the social sciences is also in a similar state. A meta-analysis of business ethics education conducted by Waples et al. (2009) focused on studies that examined the effectiveness of courses in, and instructional methods for teaching, business ethics. Another meta-analysis conducted by Medeiros et al. (2017) examined course characteristics that are conducive to effective business ethics education. Most recently, Jaganjac et al. (2023) conducted a systematic literature review of articles addressing business ethics education and a content analysis of influential business ethics studies. They found that salient topics of business ethics education research include how business ethics education ought to be included in the curriculum (i.e., as stand-alone or integrated courses) and what pedagogical tools and approaches are most effective. Moreover, the authors observe a larger shift in the discourse of business ethics education studies which have moved away from discussions on ethics and toward discussions on sustainability and corporate social responsibility. In response to this shift, the authors recommend a return to the language of ethics and addressing important institutional and cultural barriers to ethics education such as faculty resistance to ethics education, elements that do not neatly fit in the triadic relation conception of education.

In the field of psychology, Domenech Rodríguez et al. (2014) conducted a survey of ethics educators in the United States and Canada who teach in graduate training programs accredited by the American Psychological Association (APA). Based on survey responses, the authors found that the vast majority of accredited programs had an ethics course requirement. Of the various instructional approaches used, lectures and small group discussions were the most popular. Interestingly, among all teaching practices, ethics educators mostly relied on modelling ethical behavior and developing trusting relationships with students, practices that are consistent with an understanding that unspoken norms are powerful influencers of ethical behavior. Yet the authors provide no further information regarding the place of such practices in ethics education, even though they discuss the need for direct instruction to address the limitations of acculturative approaches to cultivating ethical professionals. In a

companion piece Griffith et al. (2014) analyze the content of syllabi for ethics courses offered by APA-accredited graduate programs. The focus there is even more explicitly on content, though, again, the authors discuss the importance of modelling and of paying attention to syllabus details (such as format or content unrelated to the readings) because students learn from syllabi more about professional conduct than what is explicitly part of the curriculum—e.g., if the professor cites correctly, if there is a disability accommodations statement, etc.

In a final example drawn from the field of education, Maxwell et al. (2016) tracked the availability of preservice teacher ethics education in five countries, focusing exclusively on ethics courses required and non-ethics courses that include ethics-related content. Maxwell and Schwimmer (2016) reviewed literature on teacher ethics education and show that, while it is “characterized by a considerable degree of variability” (p. 363), it focuses on the forms that ethics education takes within the curriculum, the teaching methods used, and the content to which preservice teachers are exposed. From these examples, it should be clear that the triadic relation conception of education reigns supreme in the ethics education literature across disciplines.

Ethics enculturation and the professions

Some scholars have identified limitations with the focus of ethics education on the triadic relation between teacher, student, and subject matter. Research on ethics education, they argue, ought to be complemented by research on ethics enculturation which focuses on how the environment in which learning occurs influences what students learn and how they interpret professional responsibility (e.g., Emmerich 2015; Nieusma and Cieminski 2018; West and Chur-Hansen 2004). We wish to extend the work of these scholars by developing a framework of ethics enculturation that builds on research on disciplinary socialization (Weidman et al. 2001).

That disciplinary socialization involves much more than what is formally taught to students through coursework is well established in the higher education literature. Weidman et al. (2001) highlight that socialization contains both cognitive and affective dimensions. The former dimension pertains to the acquisition of knowledge and skills and is reflected primarily in the curriculum to which students are exposed. The latter dimension pertains to the development of dispositions in students to act in ways that are appropriate for the profession into which they are being initiated. It is therefore normative in scope and inculcates the values and ethics of the profession—students “internalize behavioral norms and standards and form a sense of identity and commitment to a professional field” (p. 6).

Ethics enculturation within a profession exhibits more so the character of disciplinary socialization than it does that of the triadic relation conception of education. This should come as no surprise to professional ethicists. Virtue ethicists in the Aristotelian tradition have long argued for the importance of habituating learners to behaving morally before they are able to appreciate the importance of acting morally at an intellectual level. Ethical conduct, this line of argument goes, cannot be simply taught intellectually and justified through rationality; it also requires the gradual cultivation of dispositions to act in ways that are morally desirable (e.g., Cur-

ren 2015; Kristjánsson 2006; Peters 1981). In invoking Aristotle we do not necessarily espouse a virtue-based approach to ethics education, though we do not oppose it either. Instead, we highlight the complex nature of ethics enculturation and the need to account for all components of ethics enculturation in professional moral development, not merely what is explicitly taught to students through instruction or other forms of education captured by the triadic relation conception.

Accordingly, we suggest that ethics enculturation within one's profession is a complex multidimensional process. It is a process wherein ethics education, socialization, and professionalization all meet to produce, reproduce, and reshape the values of a profession.

Aspects of ethics enculturation

Unlike ethics education, ethics enculturation does not isolate explicit instruction on ethics or focus on higher education institutions as the only entities charged with professional moral development. It looks at the process of initiation into the norms of the profession holistically. A holistic examination leaves room for explicit ethics education, which is undoubtedly a major component of ethics enculturation. However, enculturation extends beyond that to encompass pre- and post-professional learning experiences that occur outside educational institutions. Enculturation, moreover, encapsulates both explicit and implicit processes that inform the way that one understands one's role as a professional throughout the span of their career. These important elements of enculturation consist of two intersecting axes that delineate different components of ethics enculturation (see Fig. 1).

With regard to the all-encompassing nature of the experiences that comprise ethics enculturation, we distinguish between education experiences and professionalization experiences (the horizontal axis in our diagram). The former are associated with educational institutions and correspond to the teaching and learning that occurs within higher education institutions; the latter with the process of being introduced to and initiated into one's profession outside higher education institutions. With regard to the nature of enculturation processes, we distinguish between explicit instruction and implicit socialization (the vertical axis in our diagram). The former pertains to concerted (i.e., intentional and conscious) efforts of professional educators and practitioners in teaching and spreading the norms of a profession; the latter to indirect (i.e., unintentional or unconscious) learning about and exposure to a profession's norms through professional educators and practitioners, paraprofessionals, and non-professionals. Importantly, these axes demonstrate the dynamic and dialectic nature of enculturation: constantly evolving, shaping those who are being enculturated within a profession, and reshaping the profession itself as new generations of professionals enter the field.

Based on these main axes along which ethics enculturation occurs we can identify four different modes of enculturation. These include enculturation that occurs through (1) the curriculum of professional education, (2) the hidden curriculum of professional education, (3) training within the profession, and (4) exposure to the profession. While these modes are not exclusive (i.e., several modes function intersectionally in the process of enculturation), distinguishing between them can be

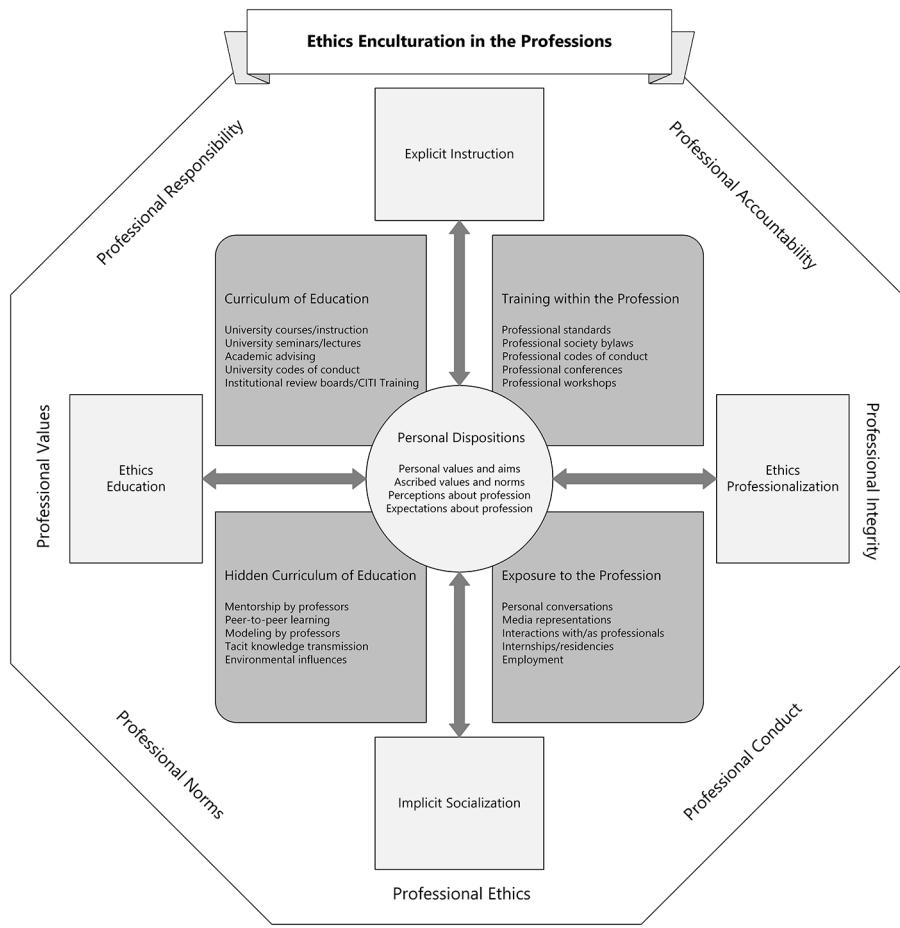


Fig. 1 Framework of ethics enculturation in the professions

analytically useful by helping researchers and educators better understand the complexity of the enculturation process.

The curriculum of professional education

The curriculum of professional education delineates the intersection of ethics education and explicit instruction. The vast majority of what is described in the literature on ethics education pertains to forms that ethics education takes in higher education and, therefore, to this mode of enculturation. Researchers prioritize data from explicit forms of ethics education to measure its impact on the ethical dispositions of students and future professionals. The main example of this mode of enculturation is the courses that students are expected to take. Ethics courses can be found both within disciplines, like courses on ethical theory and decision-making, and across the curriculum, like courses that apply ethical decision-making frameworks to spe-

cific disciplinary problems of the profession. Course content is diverse, including lectures, seminars, case-based learning, and more. The defining and unifying feature, however, is the explicit instruction that occurs within narrow institutional contexts. In these institutional contexts students learn the norms and expectations of the university and their program, many of which directly address ethics-related expectations like maintaining university standards of academic integrity or maintaining the academic standards of the program and the profession more broadly. Students also learn about these standards and norms through peripheral components of the explicit university curriculum, including texts like student handbooks and syllabi that expose students to the university code of conduct and ancillary training modules like those regarding research ethics (e.g., Collaborative Institutional Training Initiative or CITI) or legal protections from student privacy and Title IX violations (e.g., university offices of compliance).

The hidden curriculum of professional education

In addition to the standard curriculum of higher education, students are exposed to the hidden curriculum which delineates the intersection or ethics education and implicit socialization. This mode has received increasing attention by scholars who study ethics education and enculturation (e.g., Hafferty and Franks 1994; Hafferty and O'Donnell 2014; West and Chur-Hansen 2004), sometimes pointing to findings that belie the aims of the explicit ethics education that students receive through the formal curriculum (e.g., Polmear et al., 2019; White et al. 2009). It includes curricular processes that are informal, hidden, and even unintentional in many cases. Implicit teaching and learning is often associated with the acquisition of tacit professional skills and knowledge that, while central to how professions operate, are not (or cannot) be taught through explicit instruction (Freidson 2001). Standard examples include mentorship that students receive beyond formal academic advising, learning through one's interactions with one's (more advanced) peers, intentional modelling of professional behavior on how to handle professional dilemmas, and unintentional modelling that may not fully align with, or may even contradict, explicit instruction. In modelling conduct professors may also instill tacit knowledge which they cannot articulate or explicitly transmit, because this knowledge is personal and often embodied in ways that escape standard modes of communication or epistemic exchange (Polanyi 1966).

Training within the profession

Another important mode of ethics enculturation is the training that professionals receive after they complete their postsecondary education. This education delineates the intersection of ethics professionalization and explicit instruction. Like the curriculum of ethics education, training within the profession is explicit but made available through professional associations, societies, and other official organizations. Such organizations preserve the integrity of the profession by delimiting its jurisdiction, creating standards for certification and advancement, and supporting continuing education within the field. The training content that professional orga-

nizations offer includes epistemic and ethical standards, codes of conduct, and best practices by which professionals must abide. They also include professional society bylaws and policies that establish professional rules and hierarchies which maintain a profession's epistemic and social standing. Other training includes professional conferences, workshops, and seminars which support the professional development of members—both members who are newcomers and members who are well-established in the profession. In addition to the explicit instruction that occurs in such settings, professionals have opportunities to interact with and learn from their peers and novice professionals can receive mentorship from experienced professionals.

Exposure to the profession

The fourth mode of ethics enculturation includes exposure to the profession which delineates the intersection of ethics professionalization and implicit socialization. This is likely the least examined component of ethics enculturation and includes both pre-professional experiences and the ongoing impact that society has on the norms and standards of the profession. Students in the profession are exposed to ideas regarding what the profession is like, or about, from before they decide to pursue a career in it. Exposure begins early in one's life. Salient sources of exposure include, among others, one's interactions with professionals (e.g., as a customer, client, patient, family member, etc.), media representations of the profession, and personal conversations relating to the profession. Exposure changes as one moves through the channels of professional education and training. One interprets differently a media representation of lawyers before they enter law school, while in law school, and after graduating from law school. Once formal training is completed, exposure to the ethics and values of the profession continues in one's place of employment. Interactions with peers or supervisors in the day-to-day reveal aspects of the profession that are not discussed in formal educational contexts. These experiences add texture to what it means to be a professional as well as the conditions (e.g., demographic, economic, legislative, and more) in which one works that can facilitate or impede one's ability to pursue the professional goals that they aspire to (Kim et al. 2020). Exposure to the profession at all stages of one's professional career, therefore, influences how one views their role as a professional as well as how they view the profession itself.

Personal dispositions

Finally, the way in which the four modes of ethics enculturation delineated by the two axes impact individuals undergoing enculturation is mediated by the personal dispositions of those individuals (located at the center of the diagram where the four modes all meet). The experiences that each mode of ethics enculturation creates are interpreted through and inform one's personal value system as well as the aims that one has for themselves as a person and professional. As each of the modes of ethics enculturation changes a person's understanding of the profession and their role within it, so do the values and norms that one ascribes to the profession, their perceptions about the profession, and their expectations about the profession, professional organizations, and other members of the professional community. The more one

identifies with the profession, moreover, the more they potentially see their personal dispositions as aligning with their conception of the good professional (Weidman et al. 2001). At the same time, one's personal dispositions continue to influence how one views their role as professional in ways that either strengthen or change the norms of the profession. New professionals bring with them their generational values into their work in ways that reshape the profession over time (Weidman et al. 2001), as has been the case with the increasing focus of many professions in recent years on addressing inequalities and environmental disaster. Renewal occurs in a variety of ways, from simple conversations in classrooms and conferences that change the saliency of issues, to changes in professional organizations' leadership and the prioritizing of previously underplayed or disregarded values. The renewal of professional values over time is a natural outgrowth of the complex process of ethics enculturation that occurs when new professionals enter the profession, but it is also essential for maintaining the status and legitimacy of the profession in the eyes of the public. Evolving social values, norms, expectations, and ethical standards must be reflected in the professions, if professions are to maintain the public's trust as institutions that promote the public good and avoid being viewed as elitist occupations that confer privileges to their members at the expense of others (Freidson 2001).

Ethics enculturation as a dynamic and dialectic process

The elements presented in the above framework describe a process of ethics enculturation that is dynamic and dialectic. Students are not blank slates, passively receiving the norms and standards of a profession through ethics education. Students bring their own values to the profession, and these values both explicitly and implicitly impact the ways in which students are enculturated in their field and their ability to adapt to the values of the profession.

Handelsman et al. (2005) developed a model of “ethical acculturation” which focuses on how the ethical values that students bring with them when entering their field of study—and eventually their profession— influence the way in which they approach and their ability to adapt to the ethical culture of their profession. A lower degree of identification with and commitment to the values of one's profession may lead to rejection of the values of one's profession in favor of one's own ethical beliefs or, even worse, to disregard of one's professional moral obligations. A high degree of identification with the values of one's profession without a strong sense of personal ethical commitment may lead to a superficial embrace of a profession's values and moral obligations. Ideally students will combine a strong commitment to personal values with an embrace of the values of their profession, such that they gain a deep understanding of the significance of the values of the profession and can meaningfully embrace professional values as being consonant with their own values. As students embark and move through the journey of transforming themselves from outsiders of the profession to insiders (Weidman et al. 2001), their approach toward the profession's values will determine how they experience becoming a professional, what they perceive as their professional obligations, and whether they feel a sense of belonging within the profession.

Accordingly, students' personal values and pre-professional experiences may impact their ethics enculturation in diverse ways. For students whose values clearly align with and pre-professional expectations match the reality of the profession, enculturation will likely be smooth. For students experiencing a strong value and expectation mismatch, enculturation may be a painful process of transformation. Since personal values have been shown to influence students' decisions about university and career (Da Silva Añaña and Meucci Nique 2010; Kopanidis and Shaw 2014), capturing the complexity of ethics enculturation is crucial for understanding whether and how students embrace the values of the profession throughout their studies and professionalization experience—and, importantly, whether they choose to remain in the profession. A focus on ethics enculturation increases the visibility of all processes that impact professional moral development and allows (formal, nonformal, and informal) educators to be more intentional and constructive about the ways in which they contribute to the moral development of novice professionals. Focusing on ethics enculturation, in other words, makes it easier to develop in students the ethical sensibilities that we value in good professionals without alienating students or forgetting the fact that social location matters when it comes to moral development throughout one's life and professional career.

In addition to the dynamic nature of ethics enculturation, the interaction between students' personal values and the values of the profession also reflects the dialectic nature of enculturation. So understood, enculturation is not passive learning but instead active participation within a community of practice within which a student becomes initiated. The more advanced a student is in their journey of professionalization, the greater the significance of their participation in the practices of the profession. As students progress through their studies and training, they master the language of the profession and develop a distinct sense of identity as legitimate members of the profession who participate in the production and reproduction of meanings in the profession and (re)shape the profession in their own image and from one generation to the next (Lave and Wenger 1991). Prior and Bilbro (2012) explain this aspect of enculturation in a review of the academic enculturation literature, noting that enculturation is understood "as situated, historical, evolving dialogic activity, as sites where students, professionals, and societies are being remade in practice" (p. 30).

The dialectic nature of enculturation renders the inculcation of professional ethical values a process open to constant (re)negotiation between developing professionals and their mentors within the specific context in which enculturation occurs. Students push the boundaries of the profession by bringing in their internal perspectives and contextual meanings, and challenge established norms in an effort to align their personal and professional values as they develop their sense of professional identity. Professors, on the other hand, help students understand what the boundaries of the profession are and how to conform with them and become fully formed professionals. Yet students can push boundaries, causing professors to rethink the scope of the profession and make concessions that enable it to evolve. Prior (2013) has shown how this process occurs through in-depth analysis of textual artifacts, including feedback to students and examples of how students incorporate this feedback into their work. Prior finds that an instructor's discursive practices mold students to the norms

of their discipline but also that students exercise their agency in ways that influence the molding process, making it more personalized and aligned with their priorities. In coming to learn and to enact the rules, norms, and meanings of the profession, students also transform the structure of the profession itself and the professional values that define the profession (Sewell 1992).

Ethics enculturation in practice

The difficulties posed by the narrowness of ethics education and the comprehensive nature of ethics enculturation, demand a shift in orientation in the cultivation of ethical professionals. Doing justice to the process of ethics enculturation necessitates in-depth examinations of how students and other novice professionals come to adopt the values of their profession. While more extensive work must be done on that front, we will examine extant literature in the context of engineering ethics as an example of the kinds of concerns that a focus on ethics enculturation raises that are heretofore mostly ignored in the ethics education literature. Here we focus only on the example of engineering, but we believe that similar considerations are raised in diverse professional contexts like medicine, business, or education.

Recent studies in engineering ethics education have looked at the ways in which practicing engineers experience ethical decision-making and the disconnect between formal ethics education and the ethical problems that engineers encounter (e.g., Brightman et al., 2018; Zoltowski et al., 2020). Here we focus on a few recent papers that examine the kinds of experiences that impact how engineering students and engineers think about the ethics of their profession. There are several notable findings in the studies we draw from, but a few themes stand out regarding aspects of ethics enculturation that the framework presented above highlights. These are the role of extrinsic and intrinsic influences, personal values and experiences, interpersonal relations, mentorship, and culture.

The role of extrinsic and intrinsic influences

In a 2018 study, Nieuwsma and Cieminski evidence the extent to which engineering students lack confidence in their understanding of ethics, and how the influence of forces both extrinsic (e.g., university instruction) and intrinsic (e.g., one's sense of identity) impacts the way in which students interact with ethics in their profession. As one example, the authors present an activity in their university geared toward familiarizing incoming students with the engineering code of ethics of the National Society of Professional Engineers (NSPE)—an activity that bridges the explicit curriculum of education with the ethics training that engineers receive within the profession. In addition to how universities may supplement ethics coursework with professional codes of ethics, Nieuwsma and Cieminski show that students' differential exposure to ethics and sense of identity impacted the way in which they experienced the event (p. 7). This study reveals that a combination of enculturative factors, ranging from explicit instruction to implicit socialization and one's personal sense of ethics, inform the way students respond to specific elements of their ethics education and shape students' professional moral development more broadly.

The role of personal values and experiences

In a study by Kim et al. (2020) that examines the experiences of engineers in the profession, an important theme pertains to how personal values and experiences impact the way in which engineers think about their ethical responsibility and approaches to solving ethical problems. This becomes especially visible in how perceived “ethical failures” impact the ethics-related experiences of engineers. Though instances of ethical failure were rare in the study population, they were significant for participants who felt unable to accomplish their preferred outcomes due to legislative or technical constraints. In a telling example, the authors note a mechanical engineer’s feeling of personal failure for being unable to realize her ethical ideals. In the authors’ words, “she ultimately perceived the decision as ethical because it met expected thresholds to control potential contamination. However, the solution was misaligned with her own personal values; thus, she perceived it as a personal failure” (p. 10). The engineers’ experiences of exposure to the profession are distinct from and override their formal understanding of what makes a decision ethical as it relates to their explicit instructional experiences. While technically and ethically speaking, the engineering decisions that they make in the workplace may be sound given the circumstances, they are not always the decisions that engineers would have opted for, had they been in full control of the decision-making process. This is a clear demonstration of how ethical decision-making often exceeds the domain of ethics education and that to understand what informs such decision-making one must look at the larger picture of ethics enculturation.

The role of interpersonal relations

Another important theme pertaining to engineers in the profession concerns the messiness of real-world decision-making and how it belies much of what engineers learn through their formal ethics education. Kim et al. (2020) show that “interpersonal engagement with others across various contexts” (p. 11) influence ethical decision-making in ways that cannot be possibly captured by formal, or even nonformal, ethics education. While certain forms of ethics instruction (e.g., case-based instruction) are certainly more conducive to capturing the nuance of situated ethical decision-making than others (e.g., lectures), the fact remains that exposure to the profession differs depending on one’s situation, where one is coming from, and the kinds of perspectives to which one is exposed in the workplace. Ethics learning cannot realistically cease when one completes their formal education or masters the ethical codes of their profession. The increasing diversity of the workplace renders ethics enculturation something that occurs throughout one’s professional career and forces grappling with new perspectives on the ethical dilemmas that arise on a continuous basis.

The role of mentorship

A central component of ethics enculturation is the role of mentorship. Mentorship is undoubtedly an important part of ethics education where students receive explicit advising and implicit guidance when learning how to conduct themselves as future

professionals. Mentorship, however, does not end with one's education. It simply changes form depending on the context and stage of one's career and the kind of professional exposure to ethics one receives. In speaking about the importance of professional mentorship, Kim et al. (2020) discuss how engineers received mentorship that enabled them "to work through ethical challenges" and supported their moral development. Focusing on the example of a mechanical engineer working in orthopedics, the authors show how "a mentor who guided him in times of uncertainty" enabled him to navigate "ethical challenges" in his workplace and learn from them (p. 13). This example foregrounds the importance of context in dealing with problems in one's profession. While universal principles can be important for ascertaining what the right thing to do is, sometimes this cannot be done in the abstract. Professional mentorship therefore remains a crucial component of ethics enculturation throughout one's career as one navigates different industries, workplaces, and relationships.

The role of culture

A related component to mentorship is that of the culture of an organization or educational institution, beyond explicit forms of instruction. Culture is often embodied in how people with power respond to ethical problems that arise and the kinds of behaviors that they model. Nieusma and Cieminski (2018) note that unethical conduct on the part of university representatives may lead to breaches in student trust, making students more likely to violate the university's ethical standards as they question whether the university is looking out for their interests (pp. 12–13). As a component of the hidden curriculum in education, modelling ethical conduct can reinforce the kind of ethical conduct that students are taught through formal education to exhibit as future professionals. Conversely, displays of unethical conduct by people with power can send contradictory messages to students who may learn from what their supervisors do in addition to, or even instead of, what their supervisors say they should do. Culture continues to play an important role in professional contexts, whether it manifests in explicit messaging coming down from leadership or implicit messaging that is the result of leaders' willingness to do the right thing even when doing so interferes with desired company goals such as not wasting time and money (Kim et al. 2020, pp. 8–9).

The ubiquity of ethics

Ultimately, the themes discussed in engineering ethics scholarship demonstrate that ethics permeates every aspect of engineering practice (Kim and Kerr 2021) and perhaps professional life more broadly. One cannot limit the cultivation of ethical character and professional responsibility to what happens in formal education settings. Ethical character starts developing before one enters their profession and continues developing throughout one's career. We must look at ethics enculturation holistically to fully capture what it means to become an ethical professional. The ubiquity of ethics notwithstanding, the focus of ethics education on instruction narrows the scope of ethical learning such that students tend to focus on simplistic understandings of ethics like avoiding or minimizing harm in one's work (Nieusma and Cieminski 2018),

as if doing so is always straightforward or the only ethical issue that professionals encounter. To do justice to professional moral development we must therefore look beyond ethics education to ethics enculturation.

Conclusion

In this paper, we argue that the literature on cultivating ethical professionals is overwhelmingly focused on formal educational experiences. Moreover, we argue that formal education cannot alone account for everything that goes into professional moral development. Accordingly, we assert that we should focus on a holistic model of ethics enculturation and we offer a framework that builds on the process of academic enculturation and socialization in higher education to describe what each of the components of ethics enculturation is and how they relate with each other. To demonstrate the utility of the framework, we offer examples of what ethics enculturation encompasses from recent scholarship in engineering ethics education that focuses on ethics-related experiences of engineering students and engineers outside formal education settings.

Our work helps define the shape of ethics enculturation. Future work could build on the framework advanced here—as well as other frameworks of ethics enculturation—to examine ethics enculturation from multiple and perhaps complementary angles. As the cursory examples provided demonstrate, different modes of ethics enculturation often bleed into each other and impact the ways in which professionals at all career stages experience the ethics of their profession. To better understand how enculturation works we must look at these processes in greater detail, both independently and in terms of how they intersect in ways not fully captured by the ethics education literature. Importantly, ethics enculturation has important normative implications that extend beyond the descriptive task of understanding what ethics enculturation looks like and how people come to form ethical professional identities within and outside the university. Future work must also examine normative questions of whether any values *ought* to receive priority in professional education and epistemic questions concerning how to cultivate those values given the dynamic and dialectic nature of enculturation that discourages thinking about students as blank slates who embrace wholesale the values of the profession. Ethics enculturation must be theorized as a process that includes people from different social locations, with different levels of power the exercise of which may not always be legitimate, interacting within a larger social structure in which certain values, like social justice or free market capitalism, are often embedded. To develop ethical professionals we must therefore theorize the shape of ethics enculturation within particular contexts and circumstances that both enable and restrict the endeavors of ethics educators.

Even though more work must be done to explore the scope and nature of ethics enculturation, an important implication of this paper is that a shift from the language of ethics education to that of ethics enculturation has the potential to transform ethics education as we know it. The shift we propose is not merely a linguistic shift that replaces one concept of ethics education for a slightly broader and more inclusive concept; instead, it is a reconceptualization of the way that we think about profes-

sional moral development. It orients us away from the traditional triadic relation conception of ethics education and toward a holistic conception that accounts for the role that values play in moral development in all stages and contexts of professional life. Focusing on ethics enculturation compels us to become more intentional about bringing newcomers into a profession and creating an ethical culture that is conducive to ethical decision-making and action.

Of course, creating an ethical culture that undergirds all that happens within educational and professional spaces is no easy task to accomplish, since professions face important material barriers to actualizing their ideals (e.g., conflicting interests, legislative hurdles, scarcity of resources, etc.). Furthermore, the constant changes that humans and societies undergo present us with new problems, ideas, and standards. The perpetual state of flux of educational and professional landscapes renders fostering and maintaining an ethical culture a Sisyphean task. Nonetheless, focusing on ethics enculturation is an important starting point for bringing these issues to light and beginning to think about how to create enduring change within professional and institutional spaces. It is also important for reimagining the ways in which institutional structures that extend beyond the formal education curriculum, like ethics centers, can be utilized to not simply extend formal education offerings in the university but to transform the university by fostering the development of an ethical culture within and across disciplinary boundaries. Focusing on enculturation also recognizes the potential role, opportunity, and perhaps even the duty of industry and professional partners to become more widely recognized partners in the process of ethical professionalization.

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