# Review of: "Planning Courses on Ethics in Engineering Curricula"

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In line with Karjanto's review (https://doi.org/10.32388/TR53FI), I agree that Vedhathiri  makes a compelling case, why engineering-ethics education is important, needs to be institutionalized, and improved continuously at Indian universities (and overall).

The paper mirrors an effort to implement engineering-ethics training into an existing engineering curriculum. It surveys senior faculty opinion on the topic, and collects feedback on a couple of central ideas, how relevant training could be designed and strengthened. The findings are interesting empirically, since this kind of a broad support cannot be taken for granted - in other faculties across the world, there is still a lot of skepticism towards the importance or even relevance of ethics. This being said, it remains unclear, what kinds of activities were undertaken to establish this support (if any). Others could learn from this example, if more information were provided. It also remains unclear, when the respective surveys were conducted, how many people were invited to participate originally, etc.

The report could be enhanced substantially. To raise the quality of the paper, diverse improvements seem important to me.

One thing I miss in the report, is reference to empirical studies on effective methods of (engineering) ethics education. Diverse meta-analyses have already been published, e.g., with reference to business ethics and research integrity training, which could provide helpful knowledge. Hess and Fore (2018) even conducted “A Systematic Literature Review of US Engineering Ethics Interventions”, which is not cited in this paper. The overview of teaching approaches to (engineering) ethics education could be enriched substantially with reference to existing meta-studies, which name many teaching methods that are not mentioned in this report. I would encourage the author to build the foreseen program on state-of-the-art knowledge about (engineering) ethics education. As my own research has shown (https://link.springer.com/article/10.1007/s10648-021-09630-9), “classical” case discussions are not the gold standard of ethics education, for example. Students of all levels appear to learn more, if they are emotionally involved in deliberating what to do, e.g., through roleplay exercises.

Another issue concerns citation. For instance, the introduction features diverse ideas about the nature of ethics - without offering references for most claims. Although some of the claims are arguably “common knowledge” among ethicists and run back hundreds of years, others are not, e.g., relating to the ethical duties of engineers. Correct citations would do credit to the originators of the said ideas and provide readers with relevant sources to deepen their knowledge. Moreover,

some of the referenced works cannot be found in the reference section (e.g., Li and Fu). This needs to be corrected. The citation style is also unclear to me - I would expect the bibliography to either be ordered numerically (in order of appearance) or alphabetically, for instance.

Other issues pertain to unfounded empirical claims, e.g., “The commitment to excellence [which is associated with working ethically in the previous sentence] will produce an impact on the Gross Domestic Product (GDP).” The relationship between an ethical governance of businesses and state-run enterprises and GDP growth is not “clear cut”. Of course, there is ample evidence that corruption undermines a society's welfare accumulation and distribution. However, there are also economists like Friedman who believe that ethical considerations get into the way of businesses' profit maximization, which is equated to GDP growth. However dubious and unfounded Friedman's claim is - considering the damage that many profit-maximizing businesses have brought to economies - there is little clear scientific evidence (to my knowledge) that proves the opposite. I would recommend the author to substantiate claims about the positive economic effects of professionalism and an ethical practice of engineering with references to obvious examples (e.g., harm of corruption and negligence) or, where available, studies that offer solid evidence.

Finally, many ideas remain extremely vague, e.g., the goals of a “massive open online course on ethics" for newly recruited faculty members. I understand that these are considerations from a consultation process, how engineering-ethics education could be promoted systematically across several universities and that it is a matter of future work to define the matters in detail.

Overall, this paper presents a set of good intentions how to promote engineering-ethics education in India, which are supported by diverse ethical standards for engineering ethics. The knowledge contribution of the paper is very limited, however. It amounts to the outcomes of a 10-item survey among slightly more than 50 academics - which are not even discussed - and recommendations and intentions agreed upon by a smaller group of anonymous academics.

In view of this, I cannot consider the paper to be authentic research: it amounts to a kind of project report, which states the goals of an endeavor and puts them into context. I am not opposed to the publication of reports like these in scientific journals, since they can be valuable in many ways, and arguably, they should be featured in academic journals.

Considering the nature of the report, I would recommend for the author to disclose the names of the faculty who have been involved in developing this agenda for better training (with their consent!), and to revise the report in such a way that it focuses on presenting the consensus, its foundations, and the process of how it was achieved.

The 2-star rating is based on the diverse issues that I currently see in the article (some of which I haven't even named here, e.g., the disconnect between the research questions and the research methodology) and the need for major revisions.