FOR DISCUSSION: A DIRECTION FOR TELPhE INTO THE FUTURE …?

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TELPhE was formed within ASEE from policy decisions of the National Academy of Engineering (NAE). The division successfully advocated development of courses and best practices to introduce technological and engineering literacy within the context of higher education, contributed substantial literature documenting and defining its place in history, reported and interpreted theory, philosophy, data, and statistics attesting its need, and offered case studies as examples of its the critical importance to and within society. This began in 2007 with the formation of the Technological Literacy Constituent Committee (TLCC) that became TELPhE.

TELPhE is now a mature division within ASEE. Its current structure, activities, and media use may not be optimal in terms of the division effectively moving into the next generation of issues regarding technological and engineering literacy. As TELPhE is not a practice-oriented division of ASEE, its opportunities and circumstances comprise:

- Numerous aspects of current events, ranging from individual to global, reinforce the reality that the role of technology is ever more pervasive, invasive, inescapable, and essential in everyday life. At the same time, despite some progress, engineering and STEM education have fallen short of the 2002 vision of the NAE outlined in Technically Speaking. The "broad understanding of technology" remains a challenge in that the goal to "enhance informed decision making on technological issues" has been under-addressed. Given the evolution of technology since the NAE report, it is more apparent than ever that informed decision making on technological issues is vital at all levels ranging from individual to global. The work of TELPhE division members has developed the research base to support efforts to improve literacy but advancing informed decision making at all levels has not yet received significant attention. The public good suffers when individual and collective decision making on technological issues is trapped between a tyranny of the experts and a largely scientifically and technologically challenged media. Given that technology cannot be stopped or effectively regulated (at least, not until there is a disaster or major change in society), the need is to clarify models of technological decision making such that they are understandable and can be used by society at large. It should be noted that while that most other non-discipline specific ASEE divisions point this out, it is TELPhE that is trying to do something about it by emphasizing the understanding of how this process occurs. Thus, as we must learn how to thrive in this changing world while recognizing the negative impact, TELPhE can, by directing more effort and communication to enhancing informed decision making on technological issues, address the question of "Why technological and engineering literacy _**is**_ necessary?"
- Informed decisions further social justice and the common good. This perspective is a clear imperative that all individuals should be empowered to be able to make informed decisions about technological issues that impact them on a personal and societal level.
- Decision making can be interpreted broadly and in doing so the education of engineers is included within technological literacy. But this decision-making is also impacted by public policy, ethics, community engagement, equity and diversity, as well as the engineering design decision-making process. Thus, the factors involved in the decision-making process are multiple and raise fundamental issues about the underlying philosophy of engineering and engineering education.

Proposed actions to support this direction include [1]:

1. Emphasize informed decision making on technological issues.
2. Address "technological literacy" label misunderstandings.
3. Advance understanding of necessary versus contingent.
4. Create case studies.
5. Develop new dissemination approaches.
6. Study models of technological decision making.
7. Develop collaborations and partnerships.
8. Monitor progress annually.

Thus, each year's ASEE annual conference, an in-person/virtual event should be convened by TELPhE to specifically discuss, "What is TELPhE doing that is central to our mission?" This will enable the division to develop and maintain an initiative that is consistent and impactful in addressing the need to understand and apply technological and engineering literacy, to enable visioning of circumstances and issues that lie in the future, and to establish an affinity that distinguishes the division from other ASEE divisions. To this end, what should the goals and objectives of the division be? Who is our affinity group? How do we attract this group to contribute papers and literature? Within ASEE, what partnerships and relationships should the division cultivate? What does the division need to communicate, and by what media? Should the division's name be updated?

[1]   "Future Directions for Technological and Engineering Literacy and the Philosophy of Engineering: A White Paper."
       https://drive.google.com/file/d/1Nka1IuwDI7Yl6q-9Ox6D8cehji2_mEen/view