

Core Concept: Technological Impacts

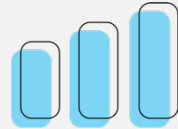
Engineering Literacy Dimension: Engineering Practices

Practice: Professionalism

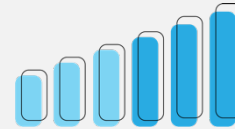
Overview: *Technological Impacts* are the effects, both positive and negative, that result from developing and using technologies. It is impossible to explore how each technological product or process will impact the future. However, it is important to understand how engineering problems and their solutions are interconnected with relevant (a) *environmental*, (b) *global*, (c) *social*, (d) *cultural*, (e) *economic*, (f) *individual*, and (g) *political issues*, in order to evaluate/revise solutions in terms of these various non-technical factors. This core concept is important to Professionalism, as engineering professionals recognize that having control over Earth's future carries with it serious responsibilities and thus, they must consider non-technical factors as well as technical factors when analyzing and solving problems.

Performance Goal for High School Learners

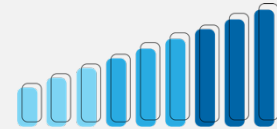
I can successfully analyze the potential impacts of my decisions within an engineering project, considering a variety of non-technical concerns, to evaluate my work in respect to relevant societal issues.



Basic



Proficient



Advanced

ENVIRONMENTAL IMPACTS

I can discuss the relationship between current environmental issues and a particular technological innovation.

I can analyze potential environmental impacts of my design and identify design criteria and constraints related to environmental issues.

I can evaluate and revise my design in consideration of its potential environmental impacts.

GLOBAL IMPACTS

I can discuss the relationship between current global issues and a particular technological innovation.

I can analyze potential global impacts of my design and identify design criteria and constraints related to global issues.

I can evaluate and revise my design in consideration of its potential global impacts.

SOCIAL IMPACTS

I can discuss the relationship between current social issues and a particular technological innovation.

I can analyze potential social impacts of my design and identify design criteria and constraints related to social issues.

I can evaluate and revise my design in consideration of its potential social impacts.

CULTURAL IMPACTS

I can discuss the relationship between current cultural issues and a particular technological innovation.

I can analyze potential culture impacts of my design and identify design criteria and constraints related to culture issues.

I can evaluate and revise my design in consideration of its potential culture impacts.