

Assessing Key Innovation Themes in Engineering Education: An Expert Consensus via the Delphi Method

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Abstract

This study uses the Delphi method to evaluate three distinct innovation sprint themes selected by the award governmental board for consideration in 2022-2023. This consensusbuilding approach creates consensus over time. Topics included advances in human-machine interfaces, artificial intelligence, and manufacturing platforms. Although these themes have potential societal and economic consequences, governmental considerations led to the requirement for expertise panel evaluation. A three-round Delphi process was employed as this methodology. An expert panel was selected to provide iterative feedback. Each round of feedback aimed at achieving consensus on materials. The teaching considered whether each theme would be developed further. The consensus was assessed using a binary scale (Accepted/Declined) for simplicity. Following the completion of the studies, the education governmental board provided recommendations. Study findings show based on the expert consensus for informed decision-making. Structured, expert-led evaluations were significant regarding the future direction of these themes. The platform development through artificial intelligence-based interface development guides governmental education decisions ensures materials innovation, and effective resource allocation in engineering education.

Keywords: Delphi method, human-machine interface, artificial intelligence, manufacturing platforms, engineering education