

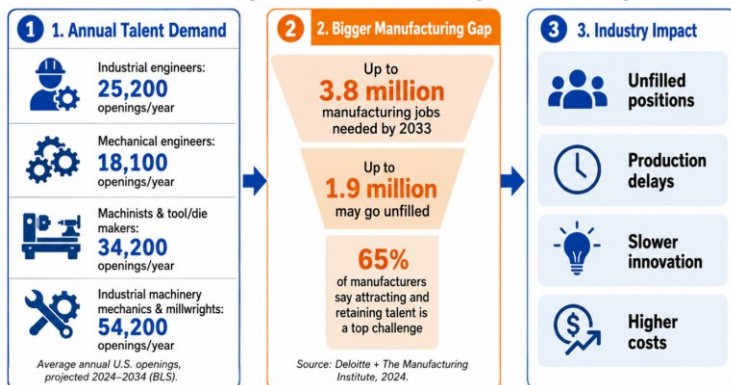
Can Manufacturing Design Be Learned More Efficiently and Enjoyably? Lessons from Arts and Music Education



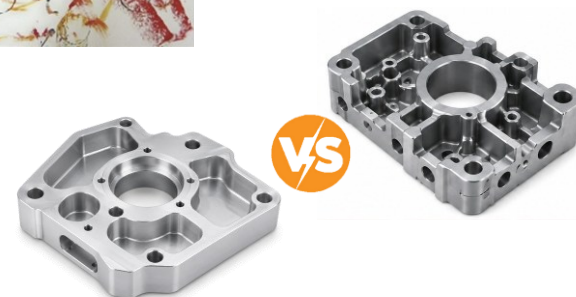
2443014: *Enhancing Situated Cognition in Product Design and Manufacturing Education through Visual Experiential Learning*

Workforce Shortage in Product Design & Manufacturing

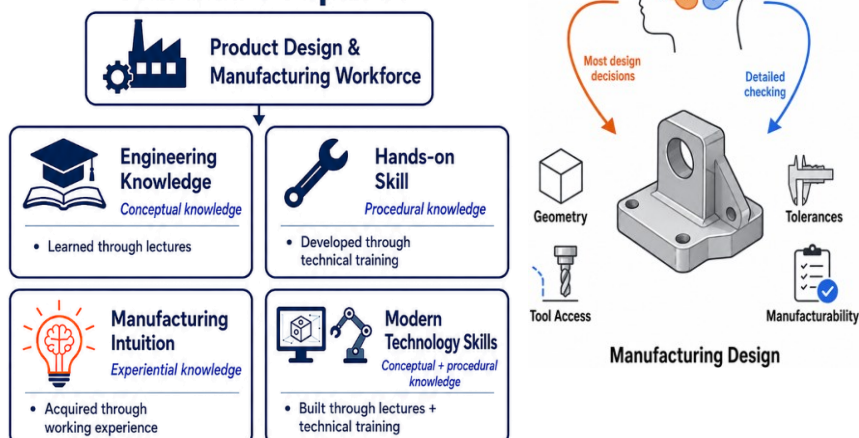
U.S. data show strong demand for talent across design and manufacturing roles.



Which one is 👍 and which one is 👎 ?



Why Is This Workforce Hard to Prepare?



Aspect	Manufacturing Design Education	Arts & Music Learning
How students learn	Learn theory first, then apply it	Observe, practice, get feedback, improve
Practice	Homework and projects	Repeated practice
Feedback	Exams and project reviews	Immediate feedback
Knowledge developed	Rules, analysis, problem-solving	Skill, intuition, judgment
View of errors	Treated as mistakes	Used as part of learning

Methods

Experiential Knowledge

Psychological Experiments

- This study examines experiential knowledge in PD&M through psychological experiments.
- Novices, practitioners, and experts are compared.
- The results will guide better teaching strategies.

Challenges

Mutual Recognition

Experimental Design

- Advancing this research area requires mutual understanding and recognition across both disciplines.
- Effective experimental design is essential for producing meaningful results.



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