Design Discipline, Education, and Differences in Perceptual Processing Determine Design Fixation

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EDU Core Research

[#2100137: Collaborative Research: Learning Preferences and Domain Differences in Design Fixation]
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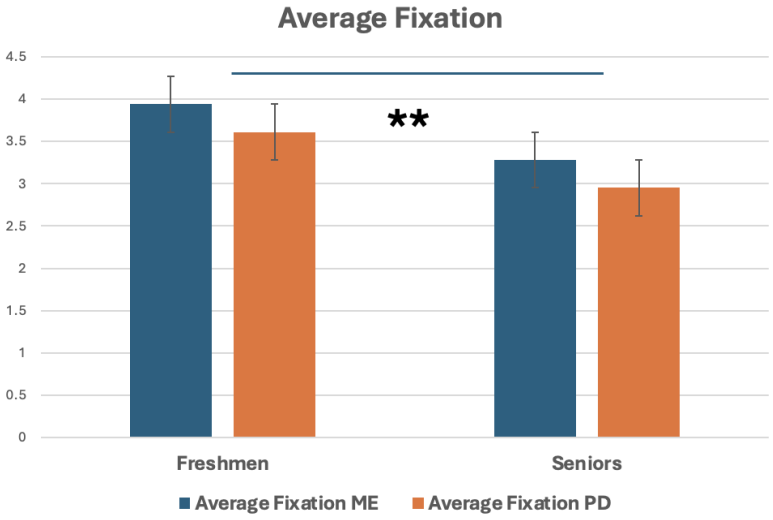
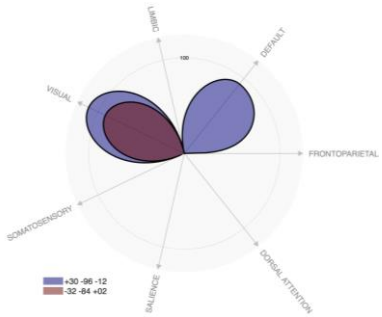
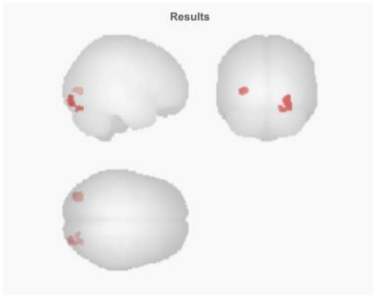


- Pictorial examples **reliably elicit design fixation**, replicating prior studies.
- Mechanical engineers (ME) show **more design fixation** than product designers (PD).
- Seniors are **less susceptible** to design fixation than freshmen.





High Fixation > Low Fixation

	Perceptual Matching RT
ME	649.36
PD	720.09

Fixation score ↑
Perceptual - Matching Task RT ↓
(r = - .23, p = .044)

- **High fixation** participants show **increased connectivity** between visual and higher-order processing regions.
- **High fixation** is associated with **faster** visual processing.

Methods

Learning preferences | fMRI

- We are collecting **behavioral** and **brain imaging** data from **freshmen + senior mechanical engineering** & **product design** students during **learning** & **design tasks**.
- Segment & analyze **verbal protocols** during design & **map on to brain imaging data**.

Challenge Overcome

Recruitment

- Hiring staff with relevant expertise
- Recruitment of specific student groups
- Very rich dataset; prioritization of analyses

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