

Culturally Contextualized Design Process: The Trajectory of Engineering Student Learning

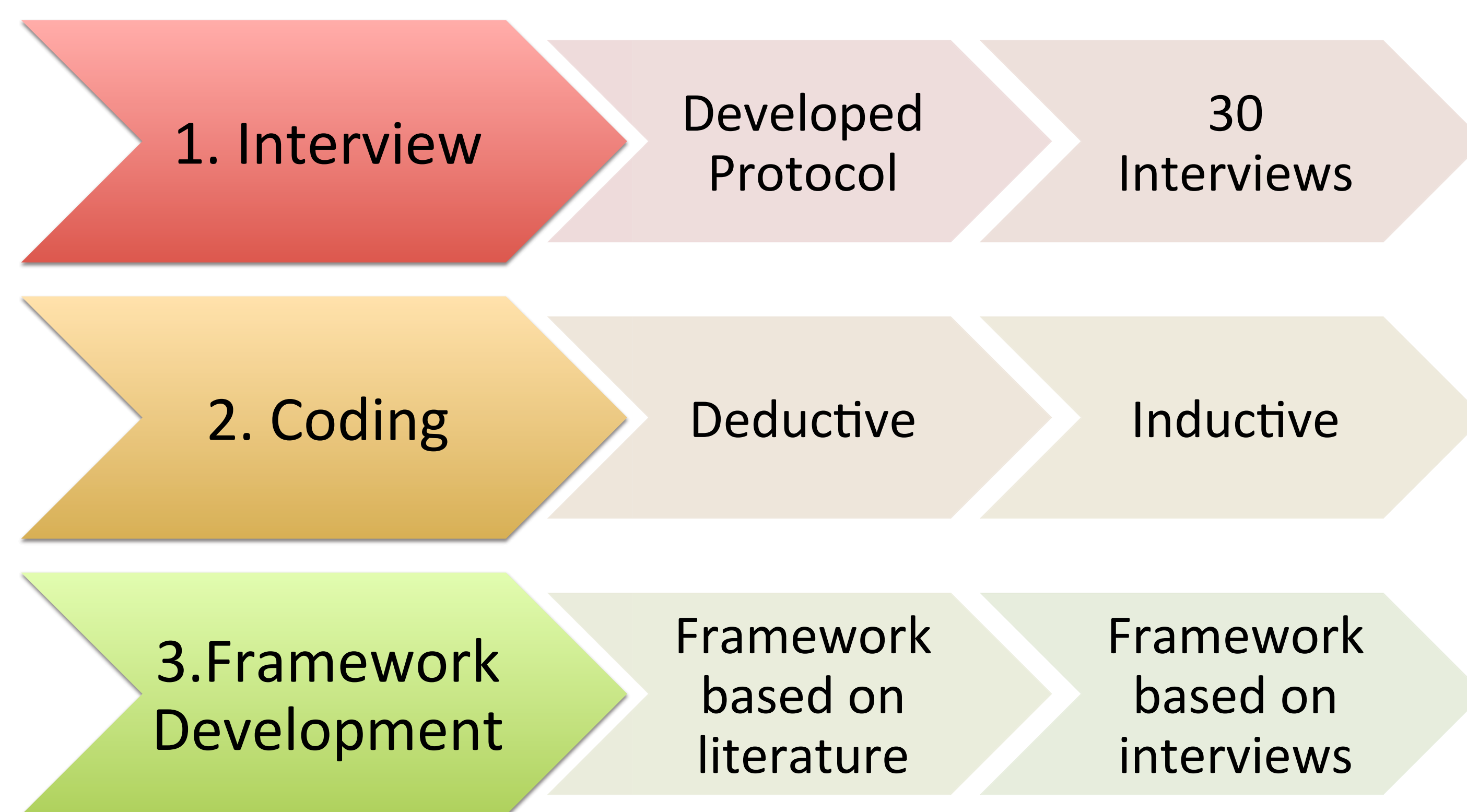
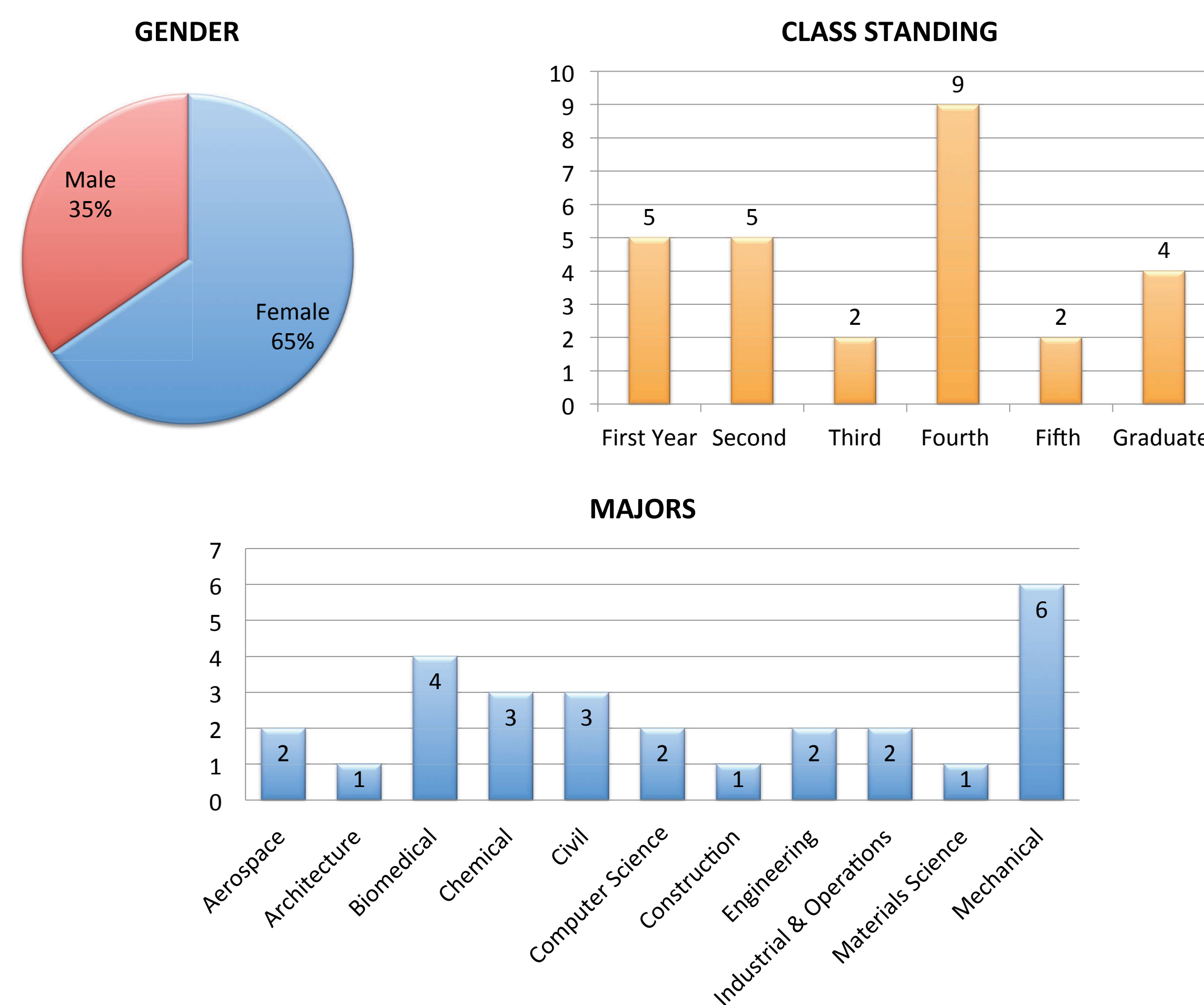
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PURPOSE

The goal of the study is to better understand the culturally contextualized design learning process of engineering students and develop a multidimensional framework that describes the process in which students learn how to culturally contextualized design.

METHODOLOGY

SAMPLE: UM undergraduate & graduate engineering students



BACKGROUND/LITERATURE

Design Process
(Duberly, 2004; Crismond & Adams, 2012...)

- > Models & Definitions
- > Student Development
- > Strategies to support the growth of student designers

Intercultural Maturity
(Bennet, 2004; King & Magola, 2005)

- > Models & Definitions
- > Student Development
- > Strategies to support the intercultural/global maturity

Cultural Contextualized Design
(Downey, 2006; Kilgore, 2007; Yu, 2012)

- > What is out there?!
- ...there are no models

CULTURALLY CONTEXTUALIZED DESIGN PROCESS MODEL

CULTURALLY CONTEXTUALIZED DESIGN PROCESS				
DESIGN PROCESS	STUDENT DEVELOPMENT			
	Novice	Informed	Engaged	Experts
Identify Need	Makes assumptions of what the stakeholders needs	Learns about stakeholders through second hand resources, without interacting with stakeholder	Respectfully enters the stakeholder's community and creates relationships in order to collaborate with stakeholders and team members to identify needs	
Research	Does not conduct research on identified problem	Obtains research from literature or online sources	In addition to research, gathers quantitative or qualitative data from stakeholders	
Generate Ideas	Generation of ideas for effectiveness or based on assumptions of stakeholders	Refers to research without consulting with stakeholders when generating ideas	Refers to research and collaborates with stakeholders and team members in the brainstorming. Listens and is open to ideas different than own.	
Test & Evaluate	Does not leave time to assess or is flexible to test and evaluate.	Compares and Assesses options based on research	In collaboration with stakeholders and team members, compares and assess options	
Decide on Solution	Decides on solution based on what is assumed to be most effective	Decides on solution on solution based on literature or data collected from experts	Decides on solution in collaboration with stakeholders by directly communicating and interacting with the stakeholder	
Implement Solution				

FUTURE STEPS

- Understand the type of experiences that allow students to grow and develop as culturally contextualized designers
- Develop pedagogy that will support the culturally contextualized design development of engineering students
- Construct an assessment instrument to gauge the development of engineering students