

On the APEC-Tsukuba Conference 2020

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The presentation focused on how human character could be developed by adopting the STEM Planning and Design Learning (PaDL) Framework, particularly the Design Learning Process for Students (DLPS). A person's 'character' refers to the disposition and habits that determine the way that a person normally responds to desires, fears, challenges, opportunities, failures and success (Pala, 2011). In DLPS model, human character is developed in the '*Empathising*' stage as shown in the figure below. Empathy is defined as the ability to share another person's feelings and emotions as if they were your own. It includes human values of compassion, appreciation, understanding and feeling.

The *Empathy stage* is about developing a human-centered view of problem solving wherein a real world problem is presented as context. It helps the students become more deeply empathic and understanding. It immerses students at the start to see', 'feel' and 'act' and is the 'heart' of any planning activity or research project to ensure that the design and proposed solution is appropriate. The students define the problem, diagnose the issue or analyze what needs to be done. It will help the students make the right decisions and avoid design failure when solving problems. A great project or design solution demands a rich empathy experience.

The figure below shows the four stages of the design learning process for students.

