

This paper investigates the use of group model building (GMB) as a means to teach Engineers Without Borders student teams systems thinking. The motivation for this research was driven by the intuition that these types of systems thinking interventions might improve on the quality of future EWB projects. In particular, we were interested in understanding if GMB in fact did teach student teams to think in systems, desired outcome in engineering education given civil infrastructure system complexity. To accomplish this goal, we sought to extract and analyze student mental models before and after implementing two GMB workshop sessions. What we found was an exciting shift in student mental models after these exercises that denotes an improvement in their understanding of project complexity, especially related to “soft” social aspects driving project success. We hope this presents a case for the use of GMB in EWB project planning, and look forward to the potential for future research that investigates if GMB for EWB project planning indeed results in more successful project implementation.

A revised version of this paper titled: “Promoting sustainable Engineers Without Borders projects: Using Group Model Building to improve student team understanding of project complexity,” has been submitted to the International Journal of Engineering Education (IJEE). For a bit more information on the model outcomes in the form of insightful CLDs created by the student team, please visit the research section of my website systemsthinkingengineering.com, and scroll down to studies on GMB and engineering education (the bottom of the page). Also be sure to keep an eye out for this publication in IJEE in the coming months. Please feel free to contact me directly if you have any comments or questions: jeffrey.walters@udp.cl.

In summary, no “full” paper will be available online with the Web Proceedings for ISDC 2016.