

## 692. What Can We Learn From Students' Perceptions Of "Good Design"?

J.M. WALKER<sup>1</sup> AND P.H. KING<sup>2</sup>

<sup>1</sup>Vanderbilt University, Nashville, TN; <sup>2</sup>Nashville, TN

An important precursor to innovation is the ability to think critically about existing solutions. To learn more about what students regard as "good design" we compared students' and experts' ratings of two design solutions. Participants were undergraduates enrolled in a senior design course and faculty at Vanderbilt University. Students were given 2 papers and posters describing previously completed projects, one of which had been rated previously by faculty as "excellent," the other as "average." Projects were rated on their engineering goals, creativity, clarity, ethical/societal considerations, thoroughness and overall competence. 70% of students recognized the higher quality project; however, almost 1/3 of the class did not. Students who rated the excellent project higher commented on differences in content whereas students who rated the average paper higher commented on its attractive appearance. Students were later informed of the judges' ratings and asked to reflect on the criteria they use to think critically about design (e.g., "This exercise points out that it is imperative to use math and engineering principles to help prove your design.") We discuss the potential of peer reviews as a measure of students' reasoning about design and as a pedagogical tool.