

## **Student Journaling/Documentation and Problem Solving Enhancement**

Raenita A. Fenner\* and Suzanne Keilson

Department of Engineering

Loyola University Maryland, Baltimore, MD, 21210

Development of personal problem solving skills is an important milestone in the development of an engineer. The development of problem solving skills may even be more essential for electrical engineers who often study abstract concepts which must be studied via inference from measurement. Additionally, there are many topics in the electrical engineering curriculum which require a level of intuition which is gained over time with practice. Examples of such topics are linear circuit analysis, microelectronics, etc. From informal observation and experience, the initial study of such topics by students causes anxiety and frustration due to the lack of predefined formulaic steps to solve the problem.

To ease student anxiety, and promote increased skill in general problem solving, a pilot study in student journaling/documentation is proposed. The study examines how in-class discussion of problem-solving algorithms and forced student journaling of analysis on quizzes impacts student learning outcomes in microelectronics. Additionally, the study examines how feedback on their journaling/documentation improves learning on outcomes on exams which follow quizzes where student journaling was forced.