Literature

# Background – Role of Laboratories in Engineering Education

## On physical experiments and individual assessment of laboratory work in engineering education

Gustavsson et al. Blekinge Institute of Technology

Broad paper that addresses pedagogy of engineering laboratories, and briefly analyses the VISIR Open Laboratory System

## Hands-on Engineering: Learning by Doing in the Integrated Teaching and Learning Program

Carlson et al at the University of Colorado, Boulder

Presents inadequacies of current approaches to engineering education. This paper will probably assist in explaining the importance of laboratories in the context of engineering education.

\*\*Learning by doing is an oft-used phrase in describing the purpose and objectives of laboratories.

## John Dewey in the 21st Century

Morgan K Williams – University of West Florida

Very broad justification for the ‘learning by doing’ approach to education. Dewey was an important philosopher and founder of the American Pragmatist school of philosophy. American Pragmatism and Dewey’s education philosophy had an important effect on engineering education, practice and ethics.

## The role of laboratory work in engineering education: student and staff perceptions

Norrie S. Edward Robert Gordon University, Aberdeen, Scotland

This is a survey and not an academic article, which will add some empirical rigour to the report! Partially a meta-analysis of the aims of practical work (from the abstract). There is a discrepancy between student and staff perceptions about the usefulness and aims of practical work

# Current Solutions

## SEITI RMLab: A costless and effective remote measurement laboratory in electrical engineering

Zine et al. in IJEEE

This article includes a brief survey of current solutions as well as the SEITI RMLab solution. A distinction is drawn between virtual and remote labs. The article also addresses a rationale for remote labs which will be useful. The article presents technical aspects of the SEITI RMLab solution

## A Virtual Electric Machine Laboratory for Synchronous Machine Application

## Web-Based Laboratory for Engineering Education

TANYILDIZI et al, Firat University, Turkey

This article describes the implementation of a virtual electric machine lab

## Electrical measurements student laboratory – replacing hands-on with remote and virtual experiments

This article briefly discusses the complexities of remote and virtual experiments, noting the distinction, and presents an outline of a web based solution

## Development and Modeling of Remote Laboratory Works for Engineering Education

Discusses the control of finite state machines. This is quite a technical document, and might not end up being that useful.