

# USING ASSESSMENT AS A TEACHING TOOL

**Marques, João E.M.**

ISEL – Instituto Superior de Engenharia de Lisboa  
Department of Mechanical Engineering

Based upon two personal beliefs, with regard to teaching that firstly “teaching is helping others to discover” and secondly that “assessment is a necessary inconvenience”, a method has been developed in teaching Fluid Dynamics to undergraduate students, in a Mechanical Engineering Course. The main goal of this method is changing from a traditional theoretical approach of teaching “what is in the book” to a much more practical confrontation between theory and what can be found in laboratory experiment.

The program contents are covered by four laboratory apparatuses:

- | Reynolds experiment,
- | Head losses in tubes,
- | Hydraulic turbines,
- | Centrifugal pumps,

which are presented to all the students during a particular class so they can prepare for their next return to the laboratory, now organized into small groups. Meanwhile, each group must define their specific objectives and work planning, so the students can accomplish the experiments off-line, with the laboratory supervisor's eventual help and subsequent report must be written within a determined period. The main results achieved a success rate which has risen from about 50%, of the evaluated students before setting up the method to 70%, but keeping the same lecturer, i.e. the same quality demand.

**Publicado em:**

*Proceedings of ASME  
IMECE 2006  
2006 ASME  
International  
Mechanical  
Engineering Congress  
and Exposition  
November 5-10, 2006,  
Chicago, Illinois USA*