

# ASSESSING THE IMPACT OF RESEARCH

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Report from the 2002 PKAL  
Summer Institute

In a plenary session at the 2002 Summer Institute, participants explored the theme *Setting and assessing goals for student learning*. One valuable exercise was to identify ways to assess student progress toward achieving skills identified with an undergraduate research experience.

Question: How would you assess the following skills:

The ability to make-up solutions and reagents for an experiment?

- ♦ have small groups take turns making reagents for each of the individual labs
- ♦ have students meet with the instructor prior to the lab and present their plans
- ♦ ask students to describe orally how they plan to make up the reagents, without looking at their notes.

The ability to use and understand data presented graphically?

- ♦ for a given set of data, ask students to describe how best to present that data and to justify their choice
- ♦ give students a graph and ask them the conclusions that can be drawn from that data
- ♦ have groups of students represent data graphically on transparencies/ power point and present it to the class for their assessment
- ♦ have one student describe the data verbally or in writing and have another student reproduce the graph without seeing it
- ♦ make students responsible for analyzing the data they collect.

The ability to make a professional presentation?

- ♦ assess the ability of the presenter to answer questions
- ♦ video tape presentations so students can critique themselves
- ♦ informative use of graphics, other visuals
- ♦ clarity in presenting questions, hypotheses, approach and outcomes of their research (develop a rubric for the presentation with the assistance of the students; have ½ the grade come from the instructor, the other ½ from student peers.)

The ability to work in a group?

- ♦ assess through weekly interviews with (rotating) group leader
- ♦ have group members assess the contributions of colleagues
- ♦ consider the delegation of tasks and the division of labor
- ♦ evaluate both the group product and the individual contributions to the final result.

The ability to pose a problem and to design an appropriate experiment?

- ♦ give students a conclusion from a newspaper and have them design an experiment that would support that conclusion
- ♦ have students design an experiment on an issue that is of current interest to them.