In the most recent CSTA Journal, McComas (1997) described how "openness"--- the degree to which students make decisions about the problem, the procedure and/or the answers (p. 8) --- is often scarce during laboratory activities. He presented a table, reproduced below for classifying levels of laboratory openness.

Table 1. Schwab/Herron Levels of Laboratory Openness			
LEVEL	PROBLEM	WAYS & MEANS	ANSWERS
O	Given	Given	Given
1	Given	Given	Open
2	Given	Open	Open
3	Open	Open	Open

A level 0 activity is one in which the teacher or lab manual decides the question or problem students will investigate, how students will do the investigation, and the validity of the investigation's results. Students make few decisions-other than deciding whether they got the "right answers."

A level 3 activity represents the other extreme. Students decide what to investigate, how to investigate it, and how to interpret the results they generate. Level 3 activities are what most scientists do; level 0 activities are what most students do.