A RESOLUTION OF THE TEXAS ACADEMY OF SCIENCE
SUPPORTING MODIFICATION OF THE SCIENCE ESSENTIAL ELEMENTS TO INCLUDE RECOGNITION OF NONEXPERIMENTAL RESEARCH DESIGNS

WHEREAS, the Texas Academy of Science is an organization of over 800 scientists and science educators in the State of Texas, and

WHEREAS, the state Board of Education is proposing to adopt the essential elements, and

WHEREAS, the current science essential elements recognizes only Experimental Research Design as representative of the ‘scientific method,’” and

WHEREAS, other nonexperimental investigative techniques, such as descriptive or comparative analysis, are recognized as appropriate research designs by the scientific community, and

WHEREAS, the failure to recognize alternative research methods unduly inhibits and confines student research and related textbooks and teaching techniques, and

WHEREAS, the State’s curricula should be modified to permit the use of such alternative scientific methods.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE TEXAS ACADEMY OF SCIENCE, that the Academy supports modification of the science essential elements to include alternative research designs, such as descriptive and comparative studies, for student investigations. The Academy suggests the following wording:

*(7) Experience in identifying a problem and designing and conducting scientific investigations. The student shall:
(A) identify a problem;
(B) describe the objective(s) for a research design, which may range from descriptive to experimental;
(C) if the research is not Experimental;
   i. state the research objective
   ii. describe the research design, and
   iii. explain how the research is expected to elucidate the objective
(D) if the research is an Experimental design;
   i. state the null and alternate hypotheses
   ii. identify the experimental and control variables
   iii. identify methods for testing for the acceptance or rejection of null hypothesis
(E) use appropriate equipment and materials to collect the data;
(F) collect, organize, analyze and interpret the acquired data; and
(G) identify threats to the validity of conclusion(s).”

PASSED AND APPROVED THE 7th day of November, 1991.

David R. Gattis, President