



# THE TEXAS ACADEMY OF SCIENCE

FOUNDED 1892 • CHARTERED 1929

AFFILIATED WITH THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

## **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