* Research, in general, is important to how we function as a successful and productive society.
* The primary goal of virtually any research study is to find answers to our questions.
  + Typical sources for answering our questions (i.e., tradition, authority, and common sense) usually fall short in helping us find those answers.
* The scientific method is a systematic, step-by-step strategy used to answer questions and resolve problems.
* The main steps in the scientific method are as follows:
  + Clarify the main question inherent in the problem.
  + State a hypothesis.
  + Collect, analyze, and interpret information (i.e., data) related to the question.
  + Form conclusions derived from the interpretations of the analyses.
  + Use the conclusions to verify or reject your hypothesis.
* Educational research is a process that involves applying the scientific method to educational problems and phenomena.
* As a process, all educational research studies share the following characteristics:
  + Are scientific
  + Begin with a question or problem that serves as the purpose or goal of the study
  + Require the formulation of a specific plan for conducting the actual research
  + Require the collection, analysis, and interpretation of data to answer the question under investigation
  + Tend to be cyclical, or helical, as opposed to linear
  + Are inquisitive, objective, and original
  + Should be beneficial, meaningful, and significant
  + Do not have predetermined outcomes
  + Do not involve simply the gathering of information
  + Are not conclusive
  + Are not trivial
* Educational research relies on either deductive or inductive reasoning.
  + Deductive reasoning works in a top-down manner from more general, broad ideas and observations to the more specific; it is commonly used in quantitative research studies.
  + Inductive reasoning works from specific observations toward the development of much broader conclusions or generalizations; it is commonly used with qualitative research studies.
* Data are collected on variables, and those data are analyzed to test hypotheses or answer research questions.
* Research designs describe the plan to be used by the researcher to carry out the actual study.
  + Quantitative research designs can be either experimental or nonexperimental.
    - Nonexperimental designs include studies that are descriptive, comparative, correlational, or causal-comparative.
    - Experimental designs allow the researcher to have some degree of control over some variables; they involve the identification of independent and dependent variables, as well as experimental and control groups of participants.
  + Qualitative research designs involve a broader, more holistic approach to collecting and analyzing data.
    - Triangulation, or polyangulation, is a process of relating multiple sources of data to verify their trustworthiness, accuracy, and consistency.
    - Qualitative designs include phenomenological, ethnographic, grounded theory, and case-study research.
  + Mixed-methods research designs, along with action research, typically involve the collection and analysis of both quantitative and qualitative data.
* The main steps in the process of conducting educational research are as follows:
  + Identification of an existing problem
  + Clarification of the specific problem
  + Formulation of research question(s)
  + Reviewing related literature
  + Development of data collection procedures
  + Specification of data analysis procedures
  + Statement of the findings resulting from data analysis
  + Development of conclusions and recommendations related to the question(s)
* Becoming familiar with your field of study by reading research articles is one of the best ways to begin your future as an educational researcher or consumer of research.
* Some of the most meaningful and beneficial research in education results from studies conducted by practicing educators.