* Identification of the research topic is crucial, as it guides and shapes the remainder of the potential research study.
* Often, initial research topics must be broadened or narrowed to be appropriate in scope and size.
* Numerous preliminary factors must be considered when selecting research topics, including
  + personal interest,
  + importance of the topic,
  + newness of the topic,
  + amount of time required,
  + potential difficulty of the topic,
  + potential monetary costs associated with the study, and
  + ethical design of the research.
* Most research topics must be refined before they can be effectively and efficiently researched.
  + This may require a narrowing or broadening of the topic, clarification or rewording of the topic, and a statement of the research question or hypothesis.
* Ideas for research topics in education can come from just about anywhere.
* Research problems are developed into problem statements, where key variables are delineated.
* Continuous variables measure a characteristic or trait along a continuum.
* Discrete, or categorical, variables measure characteristics that are divided into separate categories.
* Dichotomous variables are a special type of discrete variable, with only two possible categories.
* Variables may be continuous or discrete, depending on how the researcher measures or collects data on those variables.
* Variables may be measured on nominal, ordinal, interval, or ratio scales.
* Independent and dependent variables are designated in experimental and some comparative research.
  + An independent variable precedes the dependent variable in time and influences the dependent variable in some way.
* Confounding variables are measures of characteristics whose presence is not incorporated into the study, but may influence the results of the study.
  + Examples of confounding variables include innate traits, permanent physical traits, and naturally occurring temporary conditions.
  + Confounding variables must be controlled if research results are to be considered legitimate.
* Research questions can differ depending on whether qualitative or quantitative methods are used.
* Researchers must consider several important characteristics when stating research questions:
  + Qualitative research questions are open-ended; quantitative research questions are focused.
  + Research questions should require more than a simple yes/no answer.
  + Research questions should not be stated in a manner that assumes an answer before data are collected.
  + Research questions should not be too broad or too specific in scope.
  + Research questions should be based in the body of literature related to the topic.
  + Research questions must be answerable through the collection of available data.
  + Research questions that guide research studies must be ethical.
  + Research questions should be important and feasible to answer.
* The two main types of hypotheses are null and research, or alternative hypotheses.
  + The null hypothesis states that no effect will occur, no relationship exists, or no differences will be found.
  + The research or alternative hypothesis is a statement of the researcher’s true expectations.
  + A directional research hypothesis indicates the direction of the results; a nondirectional research hypothesis states only that there is a difference and does not specify the direction of the difference.