

Research and Evaluation Glossary

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| accuracy | A term used in survey research to refer to the match between the target population and the sample. |
| ANCOVA (analysis of co-variance) | Same method as ANOVA, but analyzes differences between dependent variables. |
| ANOVA (analysis of variance) | A method of statistical analysis broadly applicable to a number of research designs, used to determine differences among the means of two or more groups on a variable. The independent variables are usually nominal, and the dependent variable is usual an interval. |
| apparency | Clear, understandable representation of the data |
| audit trail | The systematic presentation of material gathered within a naturalistic study that allows others to follow and audit the researcher's thinking and conclusions about the data. |
| attrition | A reduction in the number of participants during the course of a study. If more participants withdraw from one group than another group, this can introduce bias and threaten the internal validity of the research. |
| bell curve | A frequency distribution statistics. Normal distribution is shaped like a bell. |
| bias | Any influence that distorts the results of a research study. |
| bracketing | A process used by researchers working within the Husserlian phenomenological tradition to identify their preconceived beliefs and opinions about the phenomenon under investigation in order to clarify how personal biases and experience might influence what is seen, heard and reported. |
| case study | The collection and presentation of detailed information about a particular participant or small group, frequently including the accounts of subjects themselves. |
| categorical variable | A variable with discrete values (e.g. a person's gender or a person's marital status). |
| causal model | A model which represents a causal relationship between two variables. |
| causal relationship | The relationship established that shows that an independent variable, and nothing else, causes a change in a dependent variable. Establishes, also, how much of a change is shown in the dependent variable. |
| causality | The relation between cause and effect. |

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| central tendency | A measure of the typicality or centrality of a set of scores; these measures indicate the middle or center of a distribution; the three main measures of central tendency are mean, median and mode. |
| clinical trial | A large-scale experiment designed to test the effectiveness of a clinical treatment. |
| coding | A procedure for transforming raw data into a standardized format for data analysis purposes. Coding qualitative data involves identifying recurrent words, concepts or themes. In positivist research, coding involves attaching numerical values to categories. |
| confirmability | Objectivity; the findings of the study could be confirmed by another person conducting the same study |
| confidence interval | The range around a numeric statistical value obtained from a sample, within which the actual, corresponding value for the population is likely to fall, at a given level of probability (Alreck, 444). |
| confidence level | The specific probability of obtaining some result from a sample if it did not exist in the population as a whole, at or below which the relationship will be regarded as statistically significant (Alreck, 444). |
| confidence limits | (Same as confidence interval, but is terminology used by Lauer and Asher.) "The range of scores or percentages within which a population percentage is likely to be found on variables that describe that population" (Lauer and Asher, 58). Confidence limits are expressed in a "plus or minus" fashion according to sample size, then corrected according to formulas based on variables connected to population size in relation to sample size and the relationship of the variable to the population size--the larger the sample, the smaller the variability or confidence limits. |
| confounding variable | A variable, other than the variable(s) under investigation, which is not controlled for and which may distort the results of experimental research; this unaccounted-for variable jeopardizes reliability and validity of an experiment's outcome. |
| constant comparative method | A procedure used during grounded theory research whereby newly gathered data are continually compared with previously collected data in order to refine the development of theoretical categories. |
| construct validity | Seeks an agreement between a theoretical concept and a specific measuring device, such as observation. |

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| content analysis | A procedure for organizing narrative, qualitative data into emerging themes and concepts. |
| content validity | The extent to which a measurement reflects the specific intended domain of content (Carmines & Zeller, 1991, p.20). |
| context sensitivity | Awareness by a qualitative researcher of factors such as values and beliefs that influence cultural behaviors |
| continuous variable | A variable that can take on an infinite range of values along a specific continuum (e.g. weight, height, time). |
| control | Processes employed to hold the conditions under which an investigation is carried out uniform or constant. In a true experimental design, the control group is the group that does not receive the intervention or treatment under investigation. The scores on the dependent variable for the control and the experimental groups are used to evaluate the effect of the independent variable. In other experimental designs, this group may be referred to as the comparison group. |
| control group | A group in an experiment that receives not treatment in order to compare the treated group against a norm. |
| convergent validity | The general agreement among ratings, gathered independently of one another, where measures should be theoretically related. |
| core category | The central category that is used to integrate all the categories identified in grounded theory research. |
| correlation | The degree of association between two variables. A tendency for variation in one variable to be linked to variation in a second variable. A common statistical analysis, usually abbreviated as r, which measures the degree of relationship between pairs of interval variables in a sample. The range of correlation is from -1.00 to zero to +1.00; a non-cause and effect relationship between two variables. |
| correlation coefficient | A measure of the degree of relationship between two variables. A correlation coefficient lies between +1.0 (indicating a perfect positive relationship), through 0 (indicating no relationship between two variables) to -1.0 (a perfect negative relationship). |
| covariate | A product of the correlation of two related variables times their standard deviations. Used in true experiments to measure the difference of treatment between them. |
| credibility | A researcher's ability to demonstrate that the object of a study is accurately identified and described, based on the way in which the study was conducted |

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| <p>criterion related validity</p> | <p>Used to demonstrate the accuracy of a measuring procedure by comparing it with another procedure which has been demonstrated to be valid; also referred to as instrumental validity.</p> |
| <p>data</p> | <p>Recorded observations, usually in numeric or textual form</p> |
| <p>data saturation</p> | <p>The point at which data collection can cease. This point of closure is arrived at when the information that is being shared with the researcher becomes repetitive and contains no new ideas, so the researcher can be reasonably confident that the inclusion of additional participants is unlikely to generate any new ideas. (Sometimes simply referred to as saturation.)</p> |
| <p>deductive</p> | <p>A form of reasoning in which conclusions are formulated about particulars from general or universal premises</p> |
| <p>deductive reasoning</p> | <p>A logical process of developing specific predictions (hypotheses) from general principles. This type of reasoning moves from the general to the particular.</p> |
| <p>dependability</p> | <p>Being able to account for changes in the design of the study and the changing conditions surrounding what was studied.</p> |
| <p>dependent variable</p> | <p>In experimental research, the dependent variable is the variable presumed within the research hypothesis to depend on (be caused by) another variable (the independent variable); it is sometimes referred to as the outcome variable. It receives stimulus and is measured for the effect the treatment has had upon it.</p> |
| <p>descriptive statistics</p> | <p>Statistical methods used to describe or summarize data collected from a specific sample (e.g. mean, median, mode, range, standard deviation).</p> |
| <p>design flexibility</p> | <p>A quality of an observational study that allows researchers to pursue inquiries on new topics or questions that emerge from initial research</p> |
| <p>determinism</p> | <p>The belief that everything is caused by specified factors (antecedent factors) in a predictable way rather than haphazardly; a key assumption within the positivist paradigm.</p> |
| <p>deviation</p> | <p>The distance between the mean and a particular data point in a given distribution.</p> |
| <p>discourse community</p> | <p>A community of scholars and researchers in a given field who respond to and communicate to each other through published articles in the community's journals and presentations at conventions. All members of the discourse community adhere to certain conventions for the presentation of their theories and research.</p> |

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| discrete variable | A variable that is measured solely in whole units, e.g., gender and siblings |
| discriminate validity | The lack of a relationship among measures which theoretically should not be related. |
| distribution | The range of values of a particular variable. |
| dynamic systems | Qualitative observational research is not concerned with having straight-forward, right or wrong answers. Change in a study is common because the researcher is not concerned with finding only one answer. |
| electronic Text | A "paper" or linear text that has been essentially "copied" into an electronic medium. |
| emic perspective (emic view) | A term used by ethnographers to refer to the insider's or native's view of his or her world (see also etic perspective). |
| empathic neutrality | A quality of qualitative researchers who strive to be non-judgmental when compiling findings |
| empirical research | "...the process of developing systematized knowledge gained from observations that are formulated to support insights and generalizations about the phenomena under study" (Lauer and Asher, 1988, p. 7) |
| equivalency reliability | The extent to which two items measure identical concepts at an identical level of difficulty. |
| ethnography | A research methodology associated with anthropology and sociology that systematically describes the culture of a group of people. The goal of ethnographic research is to understand the natives'/insiders' view of their own world (an emic view of the world). Ethnographies study groups and/or cultures over a period of time. Research is completed through various methods, which are similar to those of case studies, but since the researcher is immersed within the group for an extended period of time more detailed information is usually collected during the research. |
| ethnomethodology | Systematic study of the ways in which people use social interaction to make sense of their situation and create their 'reality'. This research methodology, associated with sociology and a subset of ethnography, focuses on how people understand their everyday activities. |
| etic perspective (etic view) | A term used by ethnographers to refer to the outsider's view of the experiences of a specific cultural group (see emic perspective). |

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| existence or frequency | This is a key question in the coding process. The researcher must decide if he/she is going to count a concept only once, for existence, no matter how many times it appears, or if he/she will count it each time it occurs. For example, "damn" could be counted once, even though it appears 50 times, or it could be counted all 50 times. The latter measurement may be interested in how many times it occurs and what that indicates, whereas the former may simply looking for existence, period. |
| experiment | Experimental Research A researcher working within this methodology creates an environment in which to observe and interpret the results of a research question. A key element in experimental research is that participants in a study are randomly assigned to groups. In an attempt to create a causal model (i.e., to discover the causal origin of a particular phenomenon), groups are treated differently and measurements are conducted to determine if different treatments appear to lead to different effects. |
| experimental research | A research methodology used to establish cause-and-effect relationships between the independent and dependent variables by means of manipulation of variables, control and randomization. A true experiment involves the random allocation of participants to experimental and control groups, manipulation of the independent variable, and the introduction of a control group (for comparison purposes). Participants are assessed before and after the manipulation of the independent variable in order to assess its effect on the dependent variable (the outcome). |
| experimental group | In experimental research the group of subjects who receive the experimental treatment or intervention under investigation. |
| external validity | The extent to which the results of a study are generalizable or transferable. See also validity |
| extraneous variable | A variable that interferes with the relationship between the independent and dependent variables and which therefore needs to be controlled for in some way. |
| face validity | How a measure or procedure appears. |
| factor analysis | A statistical test that explores relationships among data. The test explores which variables in a data set are most related to each other. In a carefully constructed survey, for example, factor analysis can yield information on patterns of responses, not simply data on a single response. Larger tendencies may then be interpreted, indicating behavior trends rather than simply responses to specific questions. |

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| field notes | Notes taken by researchers to record unstructured observations they make 'in the field' and their interpretation of those observations. |
| focus group | An interview conducted with a small group of people to explore their ideas on a particular topic. |
| frequency distribution | A visual display of numerical values ranging from the lowest to the highest, showing the number of times (frequency) each value occurs. |
| generalizability | The extent to which research findings and conclusions from a study conducted on a sample population can be applied to the population at large. |
| grounded theory | Practice of developing other theories that emerge from observing a group. Theories are grounded in the group's observable experiences, but researchers add their own insight into why those experiences exist. |
| grounded theory | A research approach used to develop conceptual categories/theory about social processes inductively from real-world observations (data) from a selected group of people. The researcher may subsequently make further observations to test out the developed categories/theory. |
| holistic perspective | Taking almost every action or communication of the whole phenomenon of a certain community or culture into account in research |
| hypertext | A nonsequential text composed of links and nodes |
| hypothesis | A statement that predicts the relationship between variables (specifically the relationship between the independent and dependent variables). A hypothesis may be directional or non-directional: Directional hypothesis (or one-tailed hypothesis) A hypothesis that makes a specific prediction about the nature and direction of the relationship between the independent and dependent variables. Non-directional hypothesis (or two-tailed hypothesis) A hypothesis that does not specify the nature and direction of the relationship between the independent and dependent variables. |

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| independent variable | The variable (or antecedent) that is assumed to cause or influence the dependent variable(s) or outcome. The independent variable is manipulated in experimental research to observe its effect on the dependent variable(s). It is sometimes referred to as the treatment variable. It includes treatment, state of variable, such as age, size, weight, etc. |
| inductive | A form of reasoning in which a generalized conclusion is formulated from particular instances |
| inductive analysis | A form of analysis based on inductive reasoning; a researcher using inductive analysis starts with answers, but forms questions throughout the research process. |
| inductive reasoning | A logical process of reasoning used to develop more general rules from specific observations; this type of reasoning moves from the specific to the more generalized. |
| inferential statistics | Statistics that allow a researcher to make inferences about whether relationships observed in a sample are likely to occur in the wider population from which that sample was drawn. Inferential statistics use logic and mathematical processes in order to test hypotheses relating to a specific population based on data gathered from a sample of the population of interest. |
| informed consent | The process of obtaining voluntary participation of individuals in research based on a full understanding of the possible benefits and risks. |
| internal consistency | The extent to which all questions or items assess the same characteristic, skill, or quality. |
| internal validity | (1) The rigor with which the study was conducted (e.g., the study's design, the care taken to conduct measurements, and decisions concerning what was and wasn't measured) and (2) the extent to which the designers of a study have taken into account alternative explanations for any causal relationships they explore (Huitt, 1998). In studies that do not explore causal relationships, only the first of these definitions should be considered when assessing internal validity. See also validity. |
| interrater reliability (interobserver reliability) | A measure of the consistency between the ratings/values assigned to an attribute that is being rated or observed; it is usually expressed as a percentage of agreement between two raters/observers or as a coefficient of agreement which may then be expressed as a probability. Usually employed by researchers using structured observation techniques. |
| interval variable | A variable in which both order of data points and distance between data points can be determined, e.g., percentage scores and distances |

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| interview | A method of data collection involving an interviewer asking questions of another person (a respondent) either face-to-face or over the telephone. |
| | Structured interview |
| | The interviewer asks the respondents the same questions using an interview schedule - a formal instrument that specifies the precise wording and ordering of all the questions to be asked of each respondent. |
| | Unstructured interview |
| | The researcher asks open-ended questions which give the respondent considerable freedom to talk freely on the topic and to influence the direction of the interview since there is no predetermined plan about the specific information to be gathered from those being interviewed. |
| interviews | A research tool in which a researcher asks questions of participants; interviews are often audio- or video-taped for later transcription and analysis. |
| irrelevant information | One must decide what to do with the information in the text that is not coded. One's options include either deleting or skipping over unwanted material, or viewing all information as relevant and important and using it to reexamine, reassess and perhaps even alter the one's coding scheme. |
| kinesics | Kinesic analysis examines what is communicated through body movement |
| level of analysis | Chosen by determining which word, set of words, or phrases will constitute a concept. According to Carley, 100-500 concepts is generally sufficient when coding for a specific topic, but this number of course varies on a case by case basis. |
| level of generalization | A researcher must decide whether concepts are to be coded exactly as they appear, or if they can be recorded in some altered or collapsed form. Using Horton as an example again, she could code profanity individually and code "damn" and "dammit" as two separate concepts. Or, by generalizing their meaning, i.e. they both express the same idea, she could group them together as one item, i.e. "damn words." |

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| level of implication | One must determine whether to code simply for explicit appearances of concepts, or for implied concepts, as well. For example, consider a hypothetical piece of text about skiing, written by an expert. The expert might refer several times to "???", as well as various other kinds of turns. One must decide whether to code "???" as an entity in and of itself, or, if coding for "turn" references in general, to code "???" as implicitly meaning "turn." Thus, by determining that the meaning "turn" is implicit in the words "???", anytime the words "???" or "turn" appear in the text, they will be coded under the same category of "turn." |
| likert scale | A method used to measure attitudes, which involves respondents indicating their degree of agreement or disagreement with a series of statements. Scores are summed to give a composite measure of attitudes. |
| link | In hypertext, a pointer from one node to another |
| matched t-test | A statistical test used to compare two sets of scores for the same subject. A matched pairs T-test can be used to determine if the scores of the same participants in a study differ under different conditions. For instance, this sort of t-test could be used to determine if people write better essays after taking a writing class than they did before taking the writing class. |
| matching | Process of corresponding variables in experimental groups equally feature for feature. |
| mean | A descriptive statistic used as a measure of central tendency. All scores in a set of scores are added together and divided by the number of subjects. The average score within a distribution. |
| mean deviation | A measure of variation that indicates the average deviation of scores in a distribution from the mean: It is determined by averaging the absolute values of the deviations. |
| measurement scale | Measurement of a phenomenon or property means assigning a number or category to represent it. The methods used to display and/or analyze numerical (quantitative) data will depend on the type of scale used to measure the variable(s). There are four scales of measurement: nominal, ordinal, interval or ratio. The data associated with each measurement scale are: nominal data, ordinal data, interval data and ratio data respectively. |
| | <p>Nominal scale</p> <p style="padding-left: 40px;">the lowest level of measurement that involves assigning characteristics into categories which are mutually exclusive, but which lack any intrinsic order (e.g.</p> |

classification by gender or by the color of a person's hair or eyes)

Ordinal scale

these categories can be used to rank order a variable, but the intervals between categories are not equal or fixed (e.g. strongly agree, agree, neither agree nor disagree, disagree, strongly disagree; social class I professional, II semi-professional, IIIa non-manual, IIIb manual, IV semi-skilled, and V unskilled).

Interval scale

the categories are ordered and there are equal intervals between points on the scale, but the zero point on the scale is arbitrary so that a particular measure cannot be said to be 'twice as' large as another measure on the same scale (e.g. degrees Centigrade).

Ratio scale

scores are assigned on a scale with equal intervals and also a true zero point (e.g. measurement in yards, feet and inches or in meters and centimeters).

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| median | A descriptive statistic used to measure central tendency. The median is the score/value that is exactly in the middle of a distribution (i.e. the value above which and below which 50% of the scores lie). |
| mental models | A group or network of interrelated concepts that reflect conscious or subconscious perceptions of reality. These internal mental networks of meaning are constructed as people draw inferences and gather information about the world. |
| meta-analysis | A statistical technique for combining and integrating the data derived from a number of experimental studies undertaken on a specific topic. |
| method slurring | This term is used to describe the tendency of some researchers to combine qualitative research approaches without adequately acknowledging the epistemological origins and assumptions that underpin the methodologies they are blending. |
| mode | A descriptive statistic that is a measure of central tendency; it is the score/value that occurs most frequently in a distribution of scores. |
| multi-modal methods | A research approach that employs a variety of methods; see also triangulation |
| narrative inquiry | A qualitative research approach based on a researcher's narrative account of the investigation, not to be confused with a narrative examined by the researcher as data |

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| naturalistic inquiry | Observational research of a group in its natural setting |
| naturalistic paradigm | This paradigm assumes that there are multiple interpretations of reality and that the goal of researchers working within this perspective is to understand how individuals construct their own reality within their social context. |
| negative correlation | A relationship between two variables where higher values on one variable tend to be associated with lower values on the second variable; sometimes referred to as an inverse relationship (e.g. age of non-vintage cars and their market value). |
| node | In hypertext, each unit of information, connected by links |
| nominal variable | A variable determined by categories which cannot be ordered, e.g., gender and color |
| nonparametric statistics | Statistical tests that can be used to analyze nominal or ordinal data; they involve fewer rigorous assumptions about the underlying distribution of variables. |
| nonsignificant result | The result of a statistical test which indicates that the outcome of an experimental research study could have occurred through random variation (or chance) at a specified level of significance, rather than as a result of manipulation of the independent variable. |
| normal distribution | A normal frequency distribution representing the probability that a majority of randomly selected members of a population will fall within the middle of the distribution. Represented by the bell curve. |
| null hypothesis | A statement that there is no relationship between the independent and dependent variables and that any relationship observed is due to chance or fluctuations in sampling. |
| observation | A method of data collection in which data are gathered through visual observations. |
| | Structured observation |
| | The researcher determines at the outset precisely what behaviors are to be observed and typically uses a standardized checklist to record the frequency with which those behaviors are observed over a specified time period. |
| | Unstructured observation |
| | The researcher uses direct observation to record behaviors as they occur, with no preconceived ideas of what will be seen; there is no predetermined plan about what will be observed. |

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| one-tailed test | Used by a researcher when testing a directional (or one-tailed) hypothesis, this type of test of statistical significance uses only one tail of an underlying distribution of scores/values to determine significance. |
| operational definition | The procedures or operations used to observe or measure a specific concept. Operationalization is the process of translating specific research concepts into observable phenomena that are measurable. |
| ordinal variable | A variable in which the order of data points can be determined but not the distance between data points, e.g., letter grades |
| p value | p is the symbol for the probability that is associated with the outcome of a test of the null hypothesis (i.e. it is the probability that an observed inferential statistic occurred through chance variation). If the p value is less than or equal to the stated significance level - often set at 5% ($p < 0.05$) or 1% ($p < 0.01$) - then the researcher concludes that the results are unlikely to have occurred by chance and are more likely to have occurred because of the manipulation of the independent variable; the results are said to be 'statistically significant'. If the p value is greater than the significance level, the researcher concludes that the results are likely to have occurred by chance variation, and the results are said to be 'nonsignificant'. |
| paradigm | <p>Kuhn defines a paradigm in two ways: 1) the entire constellation of beliefs, values and techniques shared by a scientific community; 2) the procedures used to solve specific problems and take theories to their logical conclusion. Kuhn also suggests that paradigms function as maps or guides, dictating the kinds of problem/issue which are important to address, the kinds of theories or explanations that are regarded as acceptable, and the kinds of procedure that are used to tackle particular problems.</p> <p>Guba and Lincoln (1998, p.195) argue: 'From our perspective, both qualitative and quantitative methods may be used appropriately with any research paradigm. Questions of method are secondary to questions of paradigm, which we define as the basic belief system or worldview that guides the investigator, not only in choices of method but in ontologically and epistemologically fundamental ways'. They go on to assert: 'Paradigm issues are crucial; no inquirer ? ought to go about the business of inquiry without being clear about just what paradigm informs and guides his or her approach (p.218). [Reference: Guba, E.G. and Lincoln, Y.S. (1998) 'Competing paradigms in qualitative research', in Denzin, N.K. and Lincoln, Y.S. (editors) The landscape of qualitative research: theories and issues,</p> |

Thousand Oaks, California: Sage, pp.195-220]

For the purpose of the distance learning research modules, we use the term paradigm to denote a worldview based on a set of values and philosophical assumptions that are shared by a particular academic community and that guide their approach to research.

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| parameter | A coefficient or value for the population that corresponds to a particular statistic from a sample and is often inferred from the sample. A characteristic of a population (e.g. the mean age of all nurses studying the MSc in Nursing by distance learning with the RCN Institute). |
| parametric statistics | A type of inferential statistic that involves the estimation of at least one parameter. Such tests require either interval or ratio data and involve a number of assumptions about the variables under investigation including the fact that the variable is normally distributed. |
| phenomenology | A qualitative research approach concerned with understanding certain group behaviors from that group's point of view; it focuses on the lived experience of individuals. |
| population | A well-defined group or set that has certain specified properties; the target group under investigation, as in all students enrolled in first-year composition courses taught in traditional classrooms. The population is the entire set under consideration. Samples are drawn from populations. |
| positive correlation | A relationship between two variables where higher values on one variable tend to be associated with higher values on the second variable (e.g. physical activity level and pulse rate). |
| positivism | This paradigm assumes that human behavior is determined by external stimuli and that it is possible to use the principles and methods traditionally employed by the natural scientist to observe and measure social phenomena. |
| precision | In survey research, the tightness of the confidence limits. |
| pre-defined or interactive concept choice | One must determine whether to code only from a pre-defined set of concepts and categories, or if one will develop some or all of these during the coding process. For example, using a predefined set, Horton would code only for profane language. But, if Horton coded interactively, she may have decided to half-way through the process that the text warranted coding for profane gestures, as well. |
| probability | The chance that a phenomenon has a of occurring randomly. As a statistical measure, it shown as p (the "p" factor). |
| qualitative data | Information gathered in narrative (nonnumeric) form (e.g. a |

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| | transcript of an unstructured interview). |
| qualitative research | Empirical research in which the researcher explores relationships using textual, rather than quantitative data. Case study, observation, and ethnography are considered forms of qualitative research. Results are not usually considered generalizable, but are often transferable. |
| quantitative data | Information gathered in numeric form. |
| quantitative research | Empirical research in which the researcher explores relationships using numeric data. Survey is generally considered a form of quantitative research. Results can often be generalized, though this is not always the case. |
| quasi-experiment | A type of experimental design where random assignment to groups is not employed for either ethical or practical reasons, but certain methods of control are employed and the independent variable is manipulated. A quasi-experiment incorporates interpretation and transferability in order to compensate for lack of control of variables. |
| quixotic reliability | Refers to the situation where a single manner of observation consistently, yet erroneously, yields the same result. |
| random sampling | Process used in research to draw a sample of a population strictly by chance, yielding no discernible pattern beyond chance. Random sampling can be accomplished by first numbering the population, then selecting the sample according to a table of random numbers or using a random-number computer generator. The sample is said to be random because there is no regular or discernible pattern or order. Random sample selection is used under the assumption that sufficiently large samples assigned randomly will exhibit a distribution comparable to that of the population from which the sample is drawn. |
| randomization | The random assignment of subjects to experimental and control groups (i.e. the allocation to groups is determined by chance). The subjects are initially considered not unequal because they were randomly selected. |
| randomized controlled trial (RCT) | In a RCT, participants are randomly assigned either to an intervention group (e.g. a drug treatment) or to a control group (e.g. a placebo treatment). Both groups are followed up over a specified period of time and the effects of the intervention on specific outcomes (dependent variables) defined at the outset are analyzed (e.g. serum cholesterol levels, death rates, remission rates). |
| random sampling | A process of selecting a sample whereby each member of the population has an equal chance of being included. |

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| range | A measure of variability indicating the difference between the highest and lowest values in a distribution of scores. |
| reliability | <p>Reliability is concerned with the consistency and dependability of a measuring instrument, i.e. it is an indication of the degree to which it gives the same answers over time, across similar groups and irrespective of who administers it. A reliable measuring instrument will always give the same result on different occasions assuming that what is being measured has not changed during the intervening period.</p> <p>A number of techniques can be used to ensure the reliability of a standardized measuring instrument such as an attitude questionnaire, personality test or pressure sore risk calculator. These include test-retest, split-half and alternate forms. There are also statistical tests that can be used to assess reliability such as Cronbach Alpha and the Spearman rho correlation coefficient test.</p> |
| research method | Specific procedures used to gather and analyze research data. |
| research methodology | Different approaches to systematic inquiry developed within a particular paradigm with associated epistemological assumptions (e.g. experimental research, grounded theory). |
| research question | A clear statement in the form of a question of the specific issue that a researcher wishes to answer in order to address a research problem. A research problem is an issue that lends itself to systematic investigation through research. |
| response rate | The proportion (percentage) of those invited to participate in a research study who actually do so; in survey research, the actual percentage of questionnaires completed and returned. |
| rhetorical inquiry | "entails...1) identifying a motivational concern, 2) posing questions, 3) engaging in a heuristic search (which in composition studies has often occurred by probing other fields), 4) creating a new theory or hypotheses, and 5) justifying the theory" (Lauer and Asher, 1988, p. 5) |
| rigor | Degree to which research methods are scrupulously and meticulously carried out in order to recognize important influences occurring in an experiment. |
| sample | The population researched in a particular study. Usually, attempts are made to select a "sample population" that is considered representative of groups of people to whom results will be generalized or transferred. In studies that use inferential statistics to analyze results or which are designed to be generalizable, sample size is critical--generally the larger the number in the sample, the higher the likelihood of a |

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| | representative distribution of the population. |
| sampling | <p>The process of selecting a subgroup of a population to represent the entire population. There are several different types of sampling, including:</p> <p>Simple random sampling this probability sampling method gives each eligible element/unit an equal chance of being selected in the sample; random procedures are employed to select a sample using a sampling frame.</p> <p>Systematic sampling a probability sampling strategy involving the selection of participants randomly drawn from a population at fixed intervals (e.g. every 20th name from a sampling frame).</p> <p>Cluster sampling a probability sampling strategy involving successive sampling of units (or clusters); the units sampled progress from larger ones to smaller ones (e.g. health authority/health board, trust, senior managers).</p> <p>Convenience sampling (also referred to as accidental sampling) a non-probability sampling strategy that uses the most easily accessible people (or objects) to participate in a study. Purposive/purposeful sampling: a non-probability sampling strategy in which the researcher selects participants who are considered to be typical of the wider population (sometimes referred to as judgmental sampling).</p> <p>Quota sampling a non-probability sampling strategy where the researcher identifies the various strata of a population and ensures that all these strata are proportionately represented within the sample to increase its representativeness.</p> <p>Snowball sampling a non-probability sampling strategy whereby referrals from earlier participants are used to gather the required number of participants.</p> <p>Theoretical sampling the selection of individuals within a naturalistic research study, based on emerging findings as the study progresses to ensure that key issues are adequately represented.</p> |
| sampling bias | Distortion that occurs when a sample is not representative of the population from which it was drawn. |
| sampling error | The degree to which the results from the sample deviate from those that would be obtained from the entire population, because |

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| | of random error in the selection of respondent and the corresponding reduction in reliability (Alreck, 454). |
| sampling frame | A list of the entire population eligible to be included within the specific parameters of a research study. A researcher must have a sampling frame in order to generate a random sample. |
| selective reduction | The central idea of content analysis. Text is reduced to categories consisting of a word, set of words or phrases, on which the researcher can focus. Specific words or patterns are indicative of the research question and determine levels of analysis and generalization. |
| serial effect | In survey research, a situation where questions may "lead" participant responses through establishing a certain tone early in the questionnaire. The serial effect may accrue as several questions establish a pattern of response in the participant, biasing results. |
| short-term observation | Studies that list or present findings of short-term qualitative study based on recorded observation |
| significance level | Established at the outset by a researcher when using statistical analysis to test a hypothesis (e.g. 0.05 level or 0.01 significance level). A significance level of 0.05 indicates the probability that an observed difference or relationship would be found by chance only 5 times out of every 100 (1 out of every 100 for a significance level of 0.01). It indicates the risk of the researcher making a Type I error (i.e. an error that occurs when a researcher rejects the null hypothesis when it is true and concludes that a statistically significant relationship/difference exists when it does not). |
| skewed distribution | Any distribution which is not normal, that is not symmetrical along the x-axis |
| stability reliability | The agreement of measuring instruments over time. |
| standard deviation | A term used in statistical analysis; a descriptive statistic used to measure the degree of variability within a set of scores. A measure of variation that indicates the typical distance between the scores of a distribution and the mean; it is determined by taking the square root of the average of the squared deviations in a given distribution. It can be used to indicate the proportion of data within certain ranges of scale values when the distribution conforms closely to the normal curve. |
| standard error (S.E.) of the mean | A term used in statistical analysis. A computed value based on the size of the sample and the standard deviation of the distribution, indicating the range within which the mean of the population is likely to be from the mean of the sample at a given level of probability (Alreck, 456). |

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| statistic | An estimate of a parameter calculated from a set of data gathered from a sample. |
| statistical analysis | Most statistical analysis is based on the principle of gathering data from a sample of individuals and using those data to make inferences about the wider population from which the sample was drawn. |
| statistical inference | A procedure using the laws of probability to infer the attributes of a population based on information gathered from a sample. |
| statistical significance | A term used to indicate whether the results of an analysis of data drawn from a sample are unlikely to have been caused by chance at a specified level of probability (usually 0.05 or 0.01). |
| statistical test | A statistical procedure that allows a researcher to determine the probability that the results obtained from a sample reflect true parameters of the underlying population. |
| subjects | A term most often used in positivist research to describe those who participate in research and provide the data. |
| survey | A research tool that includes at least one question which is either open-ended or close-ended and employs an oral or written method for asking these questions. The goal of a survey is to gain specific information about either a specific group or a representative sample of a particular group. Results are typically used to understand the attitudes, beliefs, or knowledge of a particular group. |
| survey research | A research approach designed to collect systematically descriptions of existing phenomena in order to describe or explain what is going on; data are obtained through direct questioning of a sample of respondents. |
| synchronic reliability | The similarity of observations within the same time frame; it is not about the similarity of things observed. |
| t-test | A statistical test. A t-test is used to determine if the scores of two groups differ on a single variable. For instance, to determine whether writing ability differs among students in two classrooms, a t-test could be used. |
| test-retest reliability | A means of assessing the stability of a research instrument by calculating the correlation between scores obtained on repeated administrations. |
| theme | A recurring issue that emerges during the analysis of qualitative data. |
| theoretical framework | The conceptual underpinning of a research study which may be based on theory or a specific conceptual model (in which case it may be referred to as the conceptual framework). |

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| theoretical notes | Notes about the observer's interpretation of observed activities found in field notes. |
| theory | In its most general sense a theory describes or explains something. Often it is the answer to 'what', 'when', 'how' or 'why' questions. |
| thick description | A rich and extensive set of details concerning methodology and context provided in a research report. |
| transferability | The ability to apply the results of research in one context to another similar context. Also, the extent to which a study invites readers to make connections between elements of the study and their own experiences. |
| translation rules | If one decides to generalize concepts during coding, then one must develop a set of rules by which less general concepts will be translated into more general ones. This doesn't involve simple generalization, for example, as with "damn" and "dammit," but requires one to determine, from a given set of concepts, what concepts are missing. When dealing with the idea of profanity, one must decide what to do with the concept "dang it," which is generally thought to imply "damn it." The researcher must make this distinction, i.e. make this implicit concept explicit, and then code for the frequency of its occurrence. This decision results in the construction of a translation rule, which instructs the researcher to code for the concept "dang it" in a certain way. |
| treatment | The stimulus given to a dependent variable. |
| triangulation | This term is used in a research context to describe the use of a variety of data sources or research methods to examine a specific phenomenon either simultaneously or sequentially in order to produce a more accurate account of the phenomenon under investigation. An example of triangulation would be a study that incorporated surveys, interviews, and observations. |
| trustworthiness | a term used to describe whether naturalistic research has been conducted in such a way that it gives the reader confidence in the findings. It can be assessed using the following criteria: |

Credibility

with its connotations of 'truth', credibility can be compared with internal validity in positivist research. A study's credibility is said to be confirmed when the reader recognizes the situation described by a research study as closely related to their own experience (sometimes referred to as confirmability).

Dependability

The dependability of a study is evaluated if it meets the

associated criterion of auditability. Auditability is achieved when a researcher provides a sufficiently clear account of the research process to allow others to follow the researcher's thinking and conclusions about the data and thus assess whether the findings are dependable.

Transferability

Equivalent to external validity in positivist research (it may also be referred to as applicability). A study is said to be transferable if the findings 'fit' contexts beyond the immediate study situation. In order to transfer the findings elsewhere, readers need sufficient information to be able to assess the extent to which a specific research setting is similar to other settings.

Type I error

An error that occurs when a researcher rejects the null hypothesis when it is true and concludes that a statistically significant relationship/difference exists when it does not.

Type II error

An error that occurs when a researcher accepts the null hypothesis when it is false and concludes that no significant relationship/difference exists when it does.

unique case orientation

A perspective adopted by many researchers conducting qualitative observational studies; researchers adopting this orientation remember every study is special and deserves in-depth attention. This is especially necessary for doing cultural comparisons.

validity

In research terms, validity refers to the accuracy and truth of the data and findings that are produced. It refers to the concepts that are being investigated; the people or objects that are being studied; the methods by which data are collected; and the findings that are produced. There are several different types of validity:

Face validity

the extent to which a measuring instrument appears to others to be measuring what it claims to measure.

Content validity

is similar to face validity except that the researcher deliberately targets individuals acknowledged to be experts in the topic area to give their opinions on the validity of the measure.

Criterion-related validity

requires the researcher to identify a relevant criterion or 'gold standard', which is itself reliable and valid, to provide an independent check of the new measure (i.e. to compare

the results from a well-established and a new measuring instrument).

Construct validity

refers to the degree to which a research instrument measures a theoretical concept (or construct) under investigation.

Internal validity

refers to the extent to which changes in the dependent variable (the observed effects) can be attributed to the independent variable rather than to extraneous variables.

External validity

refers to the degree to which the results of a study are generalisable beyond the immediate study sample and setting to other samples and settings.

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| variable | Observable characteristics that vary among individuals; an attribute or characteristics of a person or an object that takes on different values (i.e. that varies) within the population under investigation. See also ordinal variable, nominal variable, interval variable, continuous variable, discrete variable, dependent variable, independent variable. |
| variance | A measure of dispersion or variability (spread) within a distribution, calculated by squaring the value of the standard deviation (averaging the squared deviations from the mean of a distribution). |
| variation | The dispersion of data points around the mean of a distribution. |
| verisimilitude | Having the semblance of truth; in research, it refers to the probability that the research findings are consistent with occurrences in the "real world." |

The above glossary of terms has been adapted and acquired from the following sources:

Jonathan Howell, Paul Miller, Hyun Hee Park, Deborah Sattler, Todd Schack, Eric Spery, Shelley Widhalm, and Mike Palmquist. (2005). *Reliability and Validity*. Writing@CSU. Colorado State University Department of English. Retrieved April 10, 2008 from <<http://writing.colostate.edu/guides/research/glossary/>>.

University of Bath, GOLD Consortium. (2000) "Glossary of Research Methods Terms." Retrieved April 10, 2008 from <<http://www.bath.ac.uk/e-learning/gold/glossary.html#glossary>>.