Difference Between Research Terminologies

Pre - Ph.D. Course Work
Paper I (Research Methodology)

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Project and Research

Project	Research
A project is an activity where you have a defined end result and plan for achieving it	Research is an activity where you either do not have a known end result or you have observed something and are working to determine and understand the underlying mechanism that produces your observation
Project includes a series of activities to achieve a predetermined outcome within a specified time frame	Research involves a systematic study and typically there is no time limit for the study. The beginning is defined but the end may not be known
Usually has a predefined start and end point (conclusion)	Research is done on a subject/topic to establish facts and provide new conclusions

Field Research and Laboratory Research

Field Research	Laboratory Research
Field Research are studies using experimental design that occur in a natural setting. Researchers examine how the manipulation of at least one independent variable leads to a change in a dependent variable in the context of the natural environment	Laboratory Research are experiments conducted in a lab setting using the lab as an environment. Researchers have more control over how they manipulate or influence independent variables.
Carried out in everyday environment (i.e., real life) of the participants	Conducted under high controlled conditions (not necessarily a laboratory), where accurate measurements are possible
Conducted in the real world or a natural setting where participants may or may not know that they are being studied	Conducted in a setting specifically designed for research

Pilot Study and Research Study

Pilot Study	Research Study
Small study to test research protocols, data collection instruments, samples recruitment strategies and other research techniques in preparation for a larger study	Research study also known as main study/full study/large scale
Small scale preliminary study conducted in order to evaluate feasibility, duration, cost, adverse events and improve upon the study design prior to performance of a full scale research project	Conducted on a full scale taking into account the learning from the pilot study

Hypothesis and Assumption

Hypothesis	Assumption
Hypothesis is a prediction	Assumptions are basically belief and ideas that we hold to be true
Can be statistically tested and may be accepted or rejected	Often with little or no evidence and are not statistically tested in research
A hypothesis is an uncertain explanation regarding a phenomenon or event. It is widely used as the base for conducting test and the results of the test are used to determine the acceptance or rejection of the hypothesis	An assumption is also a kind of belief which is considered to be true. An assumption may not be verified or investigated. In research, assumption denotes the existence of relationship between the variables
Example- Students achieve better results by studying for longer periods of time.	Example - There is a correlation between a time period to study and marks obtained.

Probability and Non-probability Sampling

Probability Sampling	Non-Probability Sampling
▪ **Probability sampling refers to the sampling method in which all the members of the population have a pre-specified and an equal chance to be a part of the sample** ▪ **This technique is based on the randomization principle, wherein the procedure is so designed, which guarantees that each and every individual of the population has an equal selection opportunity.** ▪ **Reduces the possibility of bias** ▪ **The methods of probability sampling are:** 1. **Simple random sampling** 2. **Stratified sampling** 3. **Cluster sampling** 4. **Systematic sampling**	▪ **When in a sampling method, all the individuals of the universe are not given an equal opportunity of becoming a part of the sample, the method is said to be non-probability sampling** ▪ **Under this technique, as such there is no probability attached to the unit of population and the selection relies on the subjective judgment of the researcher** ▪ **Conclusions drawn by the sampler cannot be inferred from the sample to the whole population** ▪ **The methods of non-probability sampling are:** 1. **Convenience sampling** 2. **Quota sampling** 3 **Judgment or Purposive sampling** 4. **Snowball sampling**

Independent and Dependent Variables

Independent Variables	Dependent Variables
It is a variable that stands alone and is not changed by other variables that are being measured. Example: Age. Other factors (such as what he eats, which school he goes, how much TV he watches etc.) are not going to change a person's age	It is a variable that depends on other factors. Example: A test score. Since it could change depending on several factors such as how much you studied, how much sleep you got the night before you took rest, or even how hungry you were when you took it, the test score is a dependent variable
Causes a change in dependent variable. Example: Time spent studying causes a change in test score	It is not possible that dependent variable could cause a change in independent variable. Example: It is not possible that test score could cause a change in time spent studying

Limitations and Delimitations

Limitations	Delimitations
Limitations are the shortcomings, conditions or influences that cannot be controlled by the researcher	Delimitations are boundaries that the experimenter intentionally sets. Delimitations are those things the researcher can control
Example: Time constraints, nature of the experiment, instruments utilized and sample	Examples: Scope of research questions, variables, objectives etc.

Quantitative and Qualitative Data

Quantitative Data	Qualitative Data
Quantitative data are the result of counting or measuring attributes of a population	Qualitative data are the result of categorizing or describing attributes of a population
Quantitative data are always numbers	Qualitative data are generally described by words or letters
Examples: ▪ Amount of money ▪ Height ▪ Weight ▪ No of people living in your town ▪ No of students who take Home Science	Examples: ▪ Hair color ▪ Blood type

Primary and Secondary Sources of Data

Primary Source of Data	Secondary Source of Data
Data collected by the investigator herself/himself for a special purpose Example: data collected by a student for her/his thesis or research project **Primary Sources:** - Original documents such as diaries, speech, manuscripts, letters, interviews, records, eyewitness accounts, autobiographies - Empirical scholarly works such as research articles, clinical reports, case studies, dissertation - Creative works such as poetry, music, video, photography	Data collected by someone else for some other purpose but being utilized by the investigator for another purpose **Secondary Sources:** - Publications such as textbooks, magazines, book reviews, commentaries, encyclopedia, almanacs - Annual reviews (scholarly article reviews) - Credo References (dictionary, encyclopedias, handbooks) - EBooks - Reviews (book reviews, literature reviews)

Typeface Categories

- **A typeface is the design of lettering that can include variations such as bold, regular, light, italic, condensed, extended**
- **Font is a specific style of typeface with a set width, size, and weight**
- **Example: Arial is a typeface, 16-point Arial Bold is a font**
- **Each of these variations of typeface is a font**
- **Categories of typeface are:**

Serif	Sans serif
Serif fonts are identifiable by the small lines on the edges of letters (called serif) that makes the font easier to read in print (Books, Newspapers and most magazines) APA 7th edition recommends: 12-points Times New Roman 11-point Georgia 10-point Normal Computer Modern	San serif font letters do not have a serif attached to them, so they are displayed more clearly on websites. They have clean and very precise ends 11- point Calibri 11- point Arial 10- point Lucida Sans Unicode
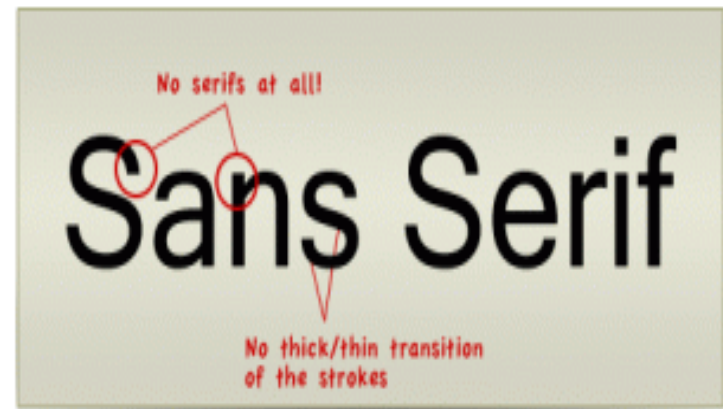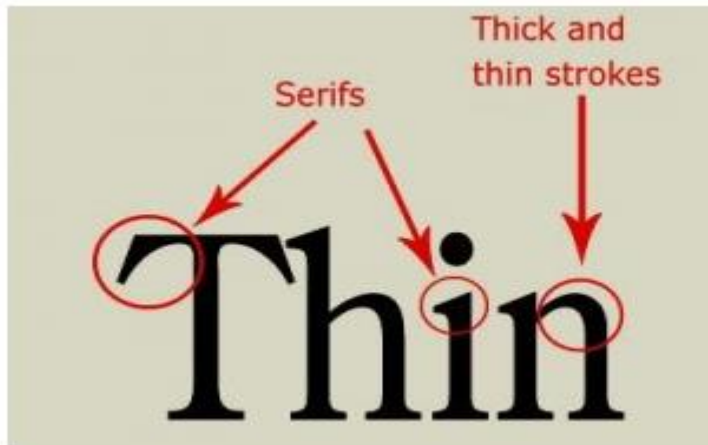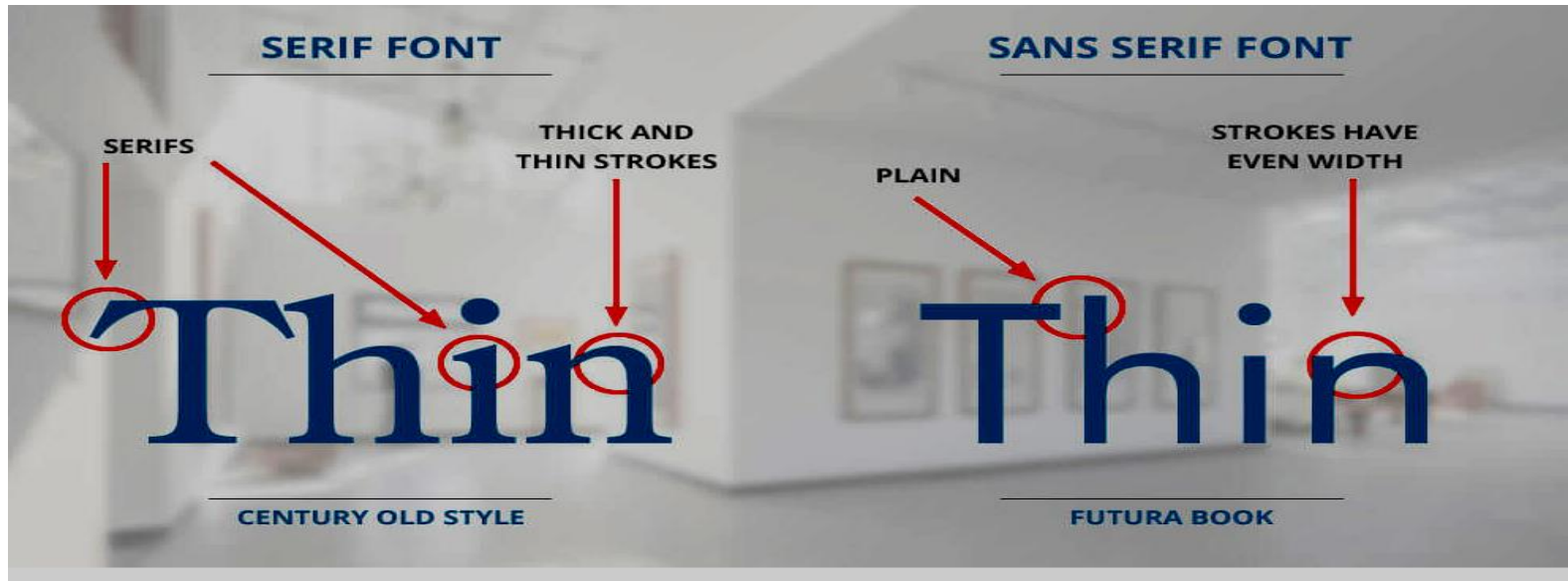
Appendix and Annexure

Appendix and annex are both forms of addendums to a main document

Appendix	Annexure
An appendix is a 'supplementary' document attached to the end of a writing but is not part of the body of the paper	An annexure is something that is attached to a document and is part of the writing
An extension matter at the end of the research work	An addition to the document
Added at the end of a book/report and contains subsidiary matters related to the main part of document or book	Implies a set of legal documents or proof which are attached to the main document, so as to confirm that the details provided in the main body are true