

# MODULE 4: METHODOLOGY

After reviewing the relevant literature and formulating your research question, you are now ready to choose your research design, determine your participants and your data collection procedures. This section is all about the process, the approach and the triangulation of data sources. Justice Cardozo cautioned us with his trite statement, “*Method is much, technique is much, but inspiration is even more.*” And keep in mind what the poet William Blake wrote, “[t]he true method of knowledge is experiment.”



## Action Research Component

- Design of the Study

## Wisconsin Teaching Standards

4K1, 4K2, 4S2, 4D2, 6K2, 6S1, 6S3, 6S7,  
7K1, 8S1, 8S2, 8S3, 8S4, 8S5, 8S6, 9K2



## Reading Assignment 4:

- Craig, Chapter 5 – Identifying Data Sets
- Craig, Chapter 6 – The Action Research Tools
- APA Manual § 2.06



## Discussion Question 4:

- Consider your research question and your subjects. How would you triangulate your data? Give examples of the tools of inquiry (instruments or intervention) you plan to use.
- Answer the question by clicking **Reply** and respond to someone else’s post by clicking **Subthread** in the discussion area, then submit for grading.



## Action Assignment 4:

- Develop the design of your study by describing your setting, participants (sampling), instruments or intervention. Include the corresponding Appendixes - instruments, tests, surveys, statistical analysis to be used. Body of the text and appendix must be on the same single document.
- Look at the rubrics (below) and check if you have all the components.

- Upload your document to the Action Assignment Area of Module 4 and submit for grading.



#### Definitions:

- **Research Design** - The overall plan for collecting data in order to answer the research question. Also the specific data analysis techniques or methods that the researcher intends to use.
  - **Autoethnography** – a qualitative research known as self-study, a form of autobiographical personal narrative that explores the writer's experience.
  - **Case Study** - a form of qualitative research in which a single individual or example is studied through extensive data collection.
  - **Causal-comparative research** - explores the cause for, or consequences of, existing differences in groups of individuals; also referred to as ex post facto research.
  - **Correlational research** - Research that involves collecting data in order to determine the degree to which a relationship exists between two or more variables.
  - **Counterbalanced design** - An experimental design in which all groups receive all treatments. Each group receives the treatments in a different order, and all groups are post tested after each treatment.
  - **Explanatory mixed-methods design** - a study in which quantitative data are collected first and further clarified with qualitative data.
  - **Exploratory mixed-methods design** – a study in which qualitative data are collected first and findings are tested with subsequent quantitative data.
  - **Narrative inquiry** - the process of gathering information for the purpose of research through storytelling.
  - **Pilot Study** - a trial, a small-scale study administered before conducting an actual study—its purpose is to reveal defects in the research plan.
  - **Quasi-experimental** - an experiment in which a potential cause (independent variable) has been manipulated, but conditions do not permit the use of a random selection of research subjects and/or the effective control of extraneous variables. Most field research which seeks to be an experiment is likely to fall into the quasi-experimental category.
  - **Qualitative Research** – a study in which the investigator attempts to study naturally occurring phenomena in a nonnumeric form such as

interview transcript, field notes, videos, meeting minutes, emails.

- **Quantitative Research** – a study in which the investigator attempts to clarify phenomena through carefully designed and controlled data collection and analysis.
- **Time-series design** - experimental design involving one group that is repeatedly pretested, exposed to an experimental treatment, and repeatedly post tested.
- **Triangulation** - a multi-method or pluralistic approach, using at least three methods of data collection to focus on the research topic from different viewpoints and to produce a multi-faceted set of data.
- **Instruments:** tools used during the study.
  - **Questionnaire** -A questionnaire comprises the questions to be asked of respondents. There are three main types: (1) questionnaires to be used in face to face or telephone interviews;(2) self completion questionnaires, which are read, completed and returned by respondents; and (3) computer administered questionnaires, which allow more complex question patterns than paper questionnaires.
  - **Survey** - A research design in which a sample of subjects is drawn from a population and studied (usually interviewed) to make inferences about the population. This design is often contrasted with the true experiment in which subjects are randomly assigned to certain conditions or treatments.
- **Context** – Environmental factors that may influence the research process and/or the results of the study such as geographic location, the physical environment, time of day, social factors, and demographic factors (e.g., age, sex, income).
- **Subjects:** the individuals who are being studied; also referred to as participants.
  - **Population** - a group of persons that one wishes to describe or about which one wishes to generalize. To generalize about a population, one often studies a sample that is meant to be representative of the population. Also called "universe."
  - **Sample** - A group of subjects selected from a larger group in the hope that studying this smaller group (the sample) will reveal important things about the larger group.
  - **Random sampling** – where every member of the population has an equal chance of being selected.
  - **Experimental Group** - A group receiving some treatment in an

experiment. Data collected about people in the experimental group are compared with data about people in a control group (who received no treatment) and/or another experimental group (who received a different treatment).

- **Control Group** – A group that, for the sake of comparison, does not receive the treatment the experimenter is interested in. The group in a research study that is treated “as usual.”
- **Treatment** - In experiments, a treatment is what researchers do to the subjects in the experimental group, but not to those in the control group. A treatment is the independent variable.
- **Dependent variable** - (a) The presumed effect in a study; so called because it "depends" on another variable. (b) The variable whose values are predicted by the independent variable, whether or not caused by it. For example, in a study to see if there is a relationship between students' drinking of alcoholic beverages and their grade point averages, the drinking behavior would be the presumed cause (independent variable); the grade point average would be the effect (dependent variable).
- **Independent variable** - In a research project which seeks to establish cause and effect between variables, the potential causal variable is known as the independent variable. A variable that affects (or is presumed to affect) the dependent variable under study and is included in the research design so that its effect can be determined; sometimes called the experimental or treatment variable.



## Appendix

- This section is located at the end of the paper for samples of assessment instruments such as surveys, questionnaires, tests, quizzes, as well as raw data such as student work product and observation notes.
- Each appendix must start on a new page.
- Appendices must be labeled in alpha order as they appear in the text.



## Web Links:

- [Electronic Textbook Statsoft](#) – portal for general statistics concepts
- [How to Design and Evaluate Research in Education](#)
- [Online QDA](#) – Qualitative Data Analysis
- [Questionform](#) create, publish and analyze data
- [Survs Beta version](#) - is a collaborative tool that enables you to create **online surveys** with simplicity at no cost.
- [Survey Monkey](#) – free online survey software and questionnaire tool
- [Twtpoll](#) is a feedback tool that helps you to create and distribute polls on

Twitter, Facebook and other social media sites.

- **External Links** in the course shell for additional resources



**Help Files:** (*aka Handouts*)

- Go to the **Tech Tips** folder in the Course Materials to find step by step instructions on the following:
  - Scanning documents
  - Tracking changes in WORD
  - Uploading assignment files
  - Uploading digital photos
  - Using the discussion area



**Rubrics:** (*shown below*)

- Discussion Question 4 – Methodology
- Action Assignment 4 – Methodology
- Action Assignment 8 - The Final Paper.

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Department of Curriculum & Instruction  
EDT 656- Action Research Using Technology  
RUBRIC FOR ONLINE DISCUSSION

Name:

Cohort/School District:

Title

Grade Level:

Possible Points	Criteria	Earned Points
2	Participation A minimum of one response and one sub-thread are posted. Active and timely participation is evident. Initial post is submitted in a timely manner to encourage discussion among classmates. Uploaded digital photo and updated profile.	
2	Interaction The learner provides meaningful feedback on other's ideas. Comments include how the idea could be enhanced or how the idea might be applied to a different content area/grade level. Where appropriate, comments offer explanations and personal examples and/or help clarify concepts for classmates. Left no unread items.	
2	Quality of Information Contributions (initial post and sub-threads) to discussion are substantive and demonstrate critical thinking. Information reveals thorough understanding of the topic as evidenced by relevant, original, and thoughtful posts, responses, and questions. Comments did not just repeat or agree with what has already been said.	
2	Delivery Tone of comments is courteous and respectful. Professional vocabulary and writing style are used consistently throughout the discussion. Posts are free of spelling and grammatical	

	errors.	
2	Resources Comments are supported by facts from texts and other identified sources when required. *	
Total Points		/10
<p><i>*Use quotation marks to indicate direct quotes. To cite any web resources, provide the web address (url) of the specific webpage (not just the website) where you found the information.</i></p> <p><u>Discussion Tips:</u></p> <ul style="list-style-type: none"> <li>• The above rubric defines the minimum requirements. Strive to exceed the minimum.</li> <li>• Length and quantity of posts does not necessarily indicate high quality work.</li> <li>• Use subheadings and spacing to help organize thoughts. Preview messages to make sure they don't display as giant paragraphs.</li> <li>• The instructor reserves the right to delete any messages deemed inappropriate to an academic discussion. Netiquette (etiquette on the Internet) disallows rudeness, inappropriate language, or a patronizing tone.</li> </ul>		

MARIAN UNIVERSITY SCHOOL OF EDUCATION  
 DEPARTMENT OF CURRICULUM & INSTRUCTION  
 EDT 656 –Action Research Using Technology  
**ACTION ASSIGNMENT 4 – METHODOLOGY**

Name

Cohort/School District: GB02

Topic

Grade Level

CRITERIA	DESCRIPTION	1st Score	2nd Score	Final Score
<b>Design</b>	Identified the research design and explained the reason for its use; Followed APA format and template guidelines, consistently and accurately; no spelling and grammatical errors			/2
<b>Setting</b>	Clearly described environmental factors (geographic location, physical environment, time of day, social factors; Followed APA format and template guidelines, consistently and accurately; no spelling and grammatical errors			/2
<b>Participants</b>	Described demographics of the general population (e.g., age, sex, income); selection and grouping of subjects; showed evidence of protection of human subjects and assurance of confidentiality (CITI and IRB); Followed APA format and template guidelines, consistently and accurately; no spelling and grammatical errors			/2
<b>Instruments</b>	Purposefully triangulated data sources; Described valid, reliable and bias-free instruments/intervention; Provided clear and complete samples of tools of inquiry in the Appendix; Followed APA format and template guidelines, consistently and accurately; no spelling and grammatical errors			/2

<b>Procedure</b>	Detailed data collection schedule step by step; outlined a realistic timeline; Followed APA format and template guidelines, consistently and accurately; no spelling and grammatical errors			/2
<b>OVERALL</b>				/10

Note: You are allowed one resubmission as long as you submit this assignment before the due date and resubmit with the corrections before the due date of the next assignment.

MARIAN UNIVERSITY SCHOOL OF EDUCATION  
Department of Curriculum & Instruction  
EDT 657 - Action Research: Reporting the Findings  
**Action Assignment 8 – The Final Paper**

Name:

Cohort/School District:

Title

Grade Level:

CRITERIA	0--1.25 = Minimal    1.26--2.5 = Basic    2.6--3.75 = Proficient    3.76--5 = Advanced	Reader 1	Reader 2
<b>Abstract</b> Action Assignment 7	Coherent and complete description of the study in APA-block format, 150-250 words, one page; double-spaced, no spelling or grammatical errors		
<b>Introduction</b> Action Assignment 1 and 3	Engaging introduction; s.m.a.r.t. problem statement/research question/hypothesis, clearly stated purpose and rationale; correctly and consistently followed APA format and template guidelines; no spelling or grammatical errors		
<b>Literature Review</b> Action Assignment 2	Well-organized review of literature, connected own study with existing research; properly cited sources, correctly and consistently followed APA format and template guidelines; no spelling or grammatical errors		
<b>Methodology</b> Action Assignment 4	Stated the appropriate design of the study; purposefully triangulated data sources; clearly described context, general population subject selection, instruments/intervention and procedure; correctly and consistently followed APA format and template guidelines; no spelling or grammatical errors		
<b>Findings</b> Action Assignment 5	Analysis fit research question or hypothesis; applied appropriate statistical analysis for quantitative research; organized, summarized and discussed the qualitative data; plausible interpretation of results; made connections with relevant studies cited in the literature review; identified limitations of the study, correctly and consistently followed APA format and template guidelines; no spelling or grammatical errors		
<b>Reflection</b> Action Assignment 6	Discussed the action research process including obstacles, successes, and lessons learned; identified new and old problems that remain unresolved and recommended appropriate research questions for further study; realistic plan of action with ways to share the results; concluded with an overall summary of the research		
<b>Figures &amp; Tables</b> Action Assignments 5 and 6	Use appropriate tables and figures to summarize the data; text adequately explained the tables and figures; properly labeled and formatted APA style, no spelling and grammatical errors		
<b>References</b> Action Assignment 2	Cited 7 or more appropriate and relevant references; all of the cited sources are current (within the last 5 years except for the classics and out-of-print books); consistently and accurately followed APA format, no spelling and grammatical errors		
<b>Appendix</b> Action Assignment 4 and 5	Complete and accurate Appendix including instruments and raw data; properly labeled; correct APA format		
<b>Overall</b> Action Assignment 8	Submitted clean final copy in one Word document on or before due date, professional and scholarly, followed APA format and template guidelines with appropriate subheadings, no spelling and grammatical errors, easy to understand, flows logically		
<b>TOTAL</b>		/50	/50

*Note: This action assignment is 50% of your final grade in EDT 657. The other 50% will be determined by your participation in group discussions 5 & 6 and action assignments 5-7. There are no resubmissions for the final paper but you are expected to make all suggested changes addressing instructor's comments before uploading a clean copy to your portfolio for your final class – EDT678. The corrected final version will be archived at Marian University as evidence of your scholarly work.*