Senior Research - Assignment 3: Primary Research

1. **Statement**: students will extend their project to include primary research. The student will need to develop:
   1. at least one of the following:
      1. interviews, experiments, surveys, and/or questionnaires.
         1. <https://www.surveymonkey.com/>
   2. Data Analysis & Graphical Representation
   3. Summary of Primary Research
2. **Objectives/Student Outcomes**
3. Create interview questions, experiments, and/or questionnaires as needed.
4. Obtain permission from your resource committee to use the tool that was created.
5. Conduct a small sample if necessary
6. Conduct the interviews, experiments, and/or surveys.
7. Summarize the data in graphical form if possible.
8. Write a summary of the interviews, experiment, and/or survey.
9. Evaluate the usefulness of the information gathered and gather new information if necessary.
10. **Grading**

|  |  |
| --- | --- |
| **A** | * Four on both primary research tool and summary of data |
| **B** | * Three on both primary research tool and summary of data |
| **C** | * Needs reminders and extensions for assignments * Two on both primary research tool and summary of data |
| **D** | * Doesn’t complete any assignments on time, but assignments are completed by the time grades are assigned * One on both primary research tool and summary of data |
| **F** | * Hasn’t completed primary research or summary of Data |

1. **Assessment(s)**
2. Teacher generated rubric for primary research tool. (See rubrics below)
3. Teacher generated rubric for summary and graphical representation of data.

Survey and Interview Rubric

Cover Letter Present or Introductory Email – 3 pts

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| --- | --- | --- | --- | --- | --- |
| ***Category*** | ***Rating*** | | | | ***Score*** |
| **4** | **3** | **2** | **1** |
| **Purpose** | Purpose is stated clearly. | Purpose is stated somewhat clearly. | Purpose is stated vaguely. | Purpose is not stated. |  |
| **Clarity of questions** | Questions are crystal clear and a person would not have to ask for clarification. | Questions are very clear and a person might have to ask for clarification. | Questions are somewhat clear and a person would have to ask for clarification. | Questions are confusing and ambiguous. |  |
| **Choice of responses** | Every person would be able to choose from the responses. | Most people would be able to choose from the responses. | Few people would be able to choose from the responses. | No one would be able to choose from the responses. |  |
| **Layout (survey) or Rapport (Interview)** | The selection of graphics, line styles, and arrangement options enhances the layout and meaning of the survey.  Good posture is used. Eye contact is maintained. No nervous habits are exhibited. | The selection of graphics, line styles and arrangement options mostly enhances the layout of the survey.  One of the following: Posture, eye contact, or uneasy behaviors was inappropriately demonstrated. | The selection of graphics, line styles and arrangement options sometimes enhances the layout of the survey.  Two of the following: Posture, eye contact, or uneasy behaviors were inappropriately demonstrated. | The selection of graphics, line styles and arrangement options do not enhance the layout of the survey.  Posture, eye contact, and uneasy behaviors were inappropriately demonstrated. |  |
| **Content** | All essential questions are properly addressed. | Most of the essential questions are properly addressed. | Some of the essential questions are properly addressed. | One or fewer essential questions are addressed. |  |
| **Spelling/ Grammar** | All words are spelled correctly.  Grammar, punctuation, spacing and word usage are appropriate. | Most words are spelled correctly.  Grammar, punctuation, spacing and word usage are mostly appropriate. | Most words are spelled correctly.  Grammar, punctuation, spacing and word usage have some errors. | Numerous spelling errors. Grammar, punctuation, spacing and word usage have a number of errors. |  |
| **Utility** | Easy to use and pleasant to look at. | Easy to follow. | Choppy, but gets the job done. | Difficult to follow and is jumbled. |  |
| ***Total Score*** | | | | |  |

**Scoring Rubric for Designing, Conducting, an Experiment.**

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| --- | --- | --- | --- | --- |
|  | **4 pts** | **3pts** | **2 pts** | **1 pt** |
| **Statement and understanding of problem** | - Problem is fully identified  - Precise, clear and relevant explanation | - Problem sufficiently identified with some validity  - Basic relevant explanation | - Problem partially identified with partial validity.  - Limited relevant explanation | - Statement of problem is irrelevant or erroneous.  - Limited or no relevant explanation |
| **Experimental Hypothesis** | - Association between the problem and the hypothesis is direct and relevant.  - Hypothesis clearly stated.  - All variables (including lurking variables) are stated  - Students use of statistical concepts and vocabulary is appropriate | - Reasonable association between the problem and the hypothesis.  - Hypothesis clearly stated.  - Key variables are stated  - Statistical concepts and vocabulary used without significant error | - Association between problem and hypothesis.  - Made attempt to state key variables  - Statistical concepts and vocabulary used, but contains errors | - Unreasonable association between problem and hypothesis  - Not all variables stated  - Little use of statistical concepts and vocabulary |
| **Experimental Design** | - Design is a well-constructed test of the stated hypothesis with treatments, control, randomization, replication  - List of materials and controls is complete and thoroughly described  - The description of the experiment is complete, insuring that it can be replicated  - Safety concerns are fully addressed in the procedures | - Design is adequate to test the hypothesis  - List of materials and controls is complete and some description provided - - Description makes it likely that the experiment can be reliably replicated  - All major safety concerns are adequately addressed; procedures adopted are likely to produce a safe experiment | - Design has general relevance to the hypothesis, some elements of treatments, control, randomization, replication missing  - List of materials and controls is nearly complete, missing at least one important item  - Description makes it possible to replicate the experiment if researcher makes some inferences  - Safety concerns miss at least one important consideration; procedures will result in some risk to student safety if not revised | - Design is not relevant to the hypothesis  - List of materials and controls incomplete -  - Some procedural components generally described but are not replicable  - Safety concerns are not specified, are irrelevant or are not appropriate to the experiment |

**Scoring Rubric for Data Analysis, Graphical Representation, and Summary of Primary Research**

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| --- | --- | --- | --- | --- |
|  | **4 pts** | **3pts** | **2 pts** | **1 pt** |
| **Data Collection** | - All significant data measured, checks are placed on measurements for accuracy  - Data recorded effectively and efficiently  - The data table well-designed to the task requirements | - All significant data measured with some checks placed on measurement for accuracy - Data recorded effectively  - The data table is relevant to the task requirements | - Most data are collected but checks are not placed on measurement to insure accuracy  - Data are recorded in a manner that threatens reliability  - Data table incomplete or contain inconsistencies | - Data are inaccurate  - Data are haphazardly recorded  - Data table missing |
| **Data Analysis** | - Appropriate statistical methods are used.  - Analysis is complete | - Appropriate statistical methods are used.  - Analysis is incomplete | - Some appropriate statistical methods are used.  - Analysis is incomplete | - Some inappropriate statistical methods are used.  - Analysis is incomplete |
| **Data Display** | - All graph forms are appropriate, multiple graphs used as warranted  - All data points accurately plotted  - Labeling clear  - Intervals appropriate  - Graph visually compelling, highlights conclusions of the study | - Graph form is appropriate, multiple graphs used as warranted - All data points included and accurately plotted  - Labeling clear  - Intervals appropriate  - Graph visually designed to assist reader | - Graph form is appropriate  - All data points included, some inaccurately plotted  - Labeling lacks clarity  - Intervals are appropriate | - Graph form inappropriate  - Data points missing or incorrect  - Inappropriate labeling  - Intervals inappropriate |
| **Conclusion/**  **Summary** | - Conclusion precisely stated, directly accepts or rejects the hypothesis  - Conclusion suggests how the conclusion has relevancy in resolution of the original problem  - Conclusion relates the study to general interest, other studies that have been or could be conducted | - Conclusion precise, related to the hypothesis  - Attempt made to make conclusion relevant to the original problem  - The conclusion related to general interest and other studies | - Conclusion too general or over-reaches the data analysis  - Conclusion not relevant to the original problem | - Inconclusive, or conclusion not warranted by data analysis |