CASE

Project 3.2.2 Determining Data to Collect

Purpose

Data collection is a critical step in the research and development process. Collecting the right data to answer the question at hand and enough data to support your solution is necessary to move the product of your efforts into the development phase.

Bias must be considered when developing tools to collect data. Bias is the tendency to bring prejudice, intentional or unintentional, into research. Bias must be carefully considered and avoided when designing data collection tools. Bias can occur at any phase of research, including study design or data collection, as well as in the process of data analysis and publication.

When collecting data, it is also important to consider variables influencing data and results. Variables not tested should be controlled and monitored to ensure they do not influence results. Any dependent and independent variables within the study should also be identified.

How do you ensure that data collected is both valid and reliable? What instruments provide the data you need for your research and development project?

Materials

Per pair of students:

- Computer with Internet access and word processing

Per student:

- Pencil
- *Agriscience Notebook*

Procedure

Review the proposed solution for your research and development project and record on *Project 3.2.2 Checksheet*. Develop a data collection plan. Include instruments, procedures, and data tables that will demonstrate how the solution solves the problem. Trade your plan with another group to review and provide feedback. Use the *Project 3.2.2 Evaluation Rubric* when reviewing another data collection plan. After all feedback and approval has been received, make adjustments to your step-by-step instructions and prepare your collection instruments.

Conclusion

1. How do desired project outcomes influence the type of data collected?
   The data is societal opinion-based so a survey is the best method of collection to get the widest variety of responses.
2. How do researchers determine data collection methods and instruments?
   The researcher should look at what type of data they are collecting to determine which method they should use.
3. How do researchers organize data that they collect?
   Data can be organized in charts and graphs or other depending on what type of data is collected.
4. How are evaluation and data collection related?
   The data is collected and then evaluated to determine the results and how they relate to the study.

Name: _____

Project 3.2.2 Checksheet

Table 1. *Problem and Solution*

Problem	Are genetically modified foods a possible solution to cut back hunger, and are people willing to accept the methods?
Solution	Educating society on the GMO methods and benefits, as well as conducting a survey to determine where the uncertainty lies will give researchers a better understanding of where there might be a disconnect.

Criteria	Comments	Target Completion Date	Date completed, Initials
The data collection method(s) selected is (are) appropriate for the proposed solution of the project.	Yes, an online survey is appropriate and easy to distribute and collect returns.		
The data collection method(s) is (are) detailed.	Surveys will be reviewed and the responses will be organized in a chart and graph.		
Data collection plans provide protocol and prototypes for organizing data in tables, photos, journal, or other records.	Yes, the categories will be easy to organize.		
The plan includes ways to ensure validity of data collected.	The results will be anonymous so individuals can be honest.		
Bias has been considered and addressed in data collection instruments.	The questions will state general concerns and reviewed for biased inflections.		
Variables have been considered and addressed in data collection instruments.	Yes, the online survey will be used to guarantee more results returned.		
What standard(s) will data be compared to?	Data will be compared to previous research completed.		
Validate your data collection plan by submitting it to another group for review and feedback.			
Adjust your plan according to feedback from other groups; submit the revised plan to the teacher.			
Adjust your step-by-step instructions to reflect data collection and ensure validity.			