

Project 2.1.4 The Problem Statement

Purpose

When developing new ideas for research and products, it is important to define the problem at hand. A problem statement is a clear, concise statement of the issue to be addressed through the project. A problem statement is used to focus the research efforts, provide direction throughout, and serve as an indicator of the success of the project. The problem statement answers questions about the need for research without implying potential solutions. How do you formulate your research idea into a clear and concise problem statement?

Materials

Per pair of students:

- Computer with Internet access and word processing software
- Library and research article access

Per student:

- Pencil
- *Agriscience Notebook*
- *Laboratory Notebook*

Procedure

You have reached the point where it is time to clearly define and state the problem you will solve through research and development in this course. Work with your partner to write a problem statement and conduct background research.

Part One – Narrowing Your Focus

1. In your *Laboratory Notebook*, begin considering concepts for research. Consider the following questions.
 - Does the problem lead me to develop a new product or a variation of an existing one?
 - What will studying the problem resolve?
 - Is there a gap in the market or a need for your idea?
2. Establish the research or product idea you prefer.
3. In your *Laboratory Notebook*, describe your research problem in detail. Use the following questions as a guide.
 - What is the end product of researching the problem?
 - Whom is the product marketed toward?
 - How is the product going to solve a problem or issue?

Part Two – Conducting Background Research

Before diving deeper into developing your own research and products, you must determine what research and products are currently available. Is your problem actually a problem? What previous work can be used to supplement your ideas?

1. Using the Internet and library sources, find a minimum of five sources of information about your project idea.

2. For each source, write an annotated reference including the source in APA format, a brief summary of the source, how the information relates to your research, and a description of the credibility and reliability of the source.
3. Type your annotated reference and save electronically. You will refer to these resources again in *Lesson 3.1 Planning Research*.
4. Print one copy and submit to your teacher with the problem statement.

Part Three – Writing a Problem Statement

Work individually to draft three problem statements pertaining to your research area of interest. Use the guidelines for writing a problem statement below. Additionally, review the resources provided for writing a problem statement. Record your draft statements in your *Laboratory Notebook*.

Problem Statement Guidelines

- Concise
- Does not offer a solution, but leaves room for multiple solutions
- Specific enough to be solvable
- Answers the following questions:
 - o What is the problem?
 - o Who has the problem?
 - o Where does the problem exist?
 - o When did the problem start or how long has it occurred?
 - o Is the problem prevalent?
 - o Is the problem valid?

Resources for Writing a Problem Statement

- Tips on Writing a Problem Statement – <http://grammar.yourdictionary.com/for-students-and-parents/tips-on-writing-a-problem-statement.html>
- How to Write a Problem Statement – <http://www.ceptara.com/blog/how-to-write-problem-statement>

Work with your partner to review the problem statements you each wrote. Use *Project 2.1.4 Evaluation Rubric* to assess your statements. Work together to revise and/or combine your rough problem statements. Compose a draft of your final problem statement for your project and print three copies. Submit one copy to your teacher and place one in your portfolio. Your partner should place the remaining copy in his or her portfolio. Be sure to save an electronic copy as well.

Conclusion

1. Why is defining and writing a concise problem statement helpful when conducting research?
 - a. The problem statement directs your research and help you concentrate on a specific problem and solution.
2. How does conducting background research assist in developing the problem statement?
 - a. Research helps you see the issues with the area of interest and make sure your problem is valid.

Research Concepts:

People do not understand the difference between use by, sell by, best by dates and expiration dates. If we can better understand what people do not/do understand, then we can do a better job of informing people what to do about expiration dates.

Research Problem

By researching this problem, we can better understand what consumers know or understand about labels. By understanding this, we can inform consumers to help reduce the amount of food waste.

Annotated References

Food Expiration Dates Survey. (n.d.). Retrieved June 24, 2017, from <http://www.nsf.gov/consumer-resources/studies-articles/surveys/food-expiration-dates-survey>

- This explains results of consumers surveys about expiration dates.
- This relates to the topic because it explains some consumer perceptions.
- This is credible, it's from the NSF public health and safety organization.

FSIS. (n.d.) Retrieved June 24, 2017, from <https://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/food-labeling/food-product-dating/food-product-dating>

- This article describes food product dating information. This includes: What is Food Product Dating?, Does Federal Law Require Dating?, Are Dates for Food Safety or Quality?, How do Manufacturers Determine Quality Dates?, What Types of Food are Dated?, What Date-Labeling Phrases are Used?, What Date-Labeling Phrase does FSIS Recommend?, Safety After Date Passes, Can Food be Donated After the Date Passes?, Dating Infant Formula, What Do Can Codes Mean?, Dates on Egg Cartons, Bar Codes, Date Labeling and Impact on Food Waste, and Proper Handling of Food.
- This information relates to the topic because it explains the federal information about food labeling.
- This is credible and reliable because it is from Food Safety and Inspection Service, part of the United States Department of Agriculture.

Lawrence, S. (n.d.). Do Food Expiration Dates Really Matter? Retrieved June 24, 2017 from <http://www.webmd.com/a-to-z-guides/features/do-food-expiration-dates-matter#2>

- Webmd explains more types of label dates and recommends how long food can be used after purchase. It also gives recommendations about how food expiration dates can be stretched.
- This related to the topic because it explains other food labels and explains how long food can last past an expiration date.
- This is credible and reliable because it is webmd, which is a website from doctors.

"Sell By" Date Labels Confuse Customers, Increase Food Waste. (2016, May 20). Retrieved June 24, 2017, from <http://theplate.nationalgeographic.com/2016/05/20/sell-by-date-labels-confuse-customers-increase-food-waste/>

- This article looks at consumer preference and cites several surveys about food dates.

- Relates to the topic because it explains what consumers think/believe about food dates
- Is credible, as it is from National Geographic.

Why Food Date Labels Don't Mean What You Think. (2016, August 10). Retrieved June 24, 2017, from <http://www.pbs.org/wgbh/nova/next/body/food-expiration-dates/>

- This article uses milk to explain date labels and what it means when you drink milk after that date. It also explains the difference between expires and best by dates, legislating for standards, mitigating food waste, and explains what Walmart is doing about food labels.
- This article relates to the topic because it explains some about public perceptions and refers to food waste because of labeling.
- This article is credible because it is from PBS and cites several college professors.

Wei, Jackie. (2013, Sept. 18). New Report: Food Expiration Date Confusion Causing up to 90% of Americans to Waste Food. Retrieved June 24, 2016 from <http://www.nrdc.org/media/2014/130918>.

- This articles looks at labeling categories, standardize labeling, and gives different facts about food waste in the US.

Harvey, Chelsea. (2016, May 19). The Expiration Dates on our Food Could be Contributing to a Huge Environmental Problem. Retrieved June 24, 2017 from https://www.washingtonpost.com/news/energy-environment/wp/2016/05/19/the-surprising-factor-thats-causing-people-to-throw-away-perfectly-good-food/?utm_term=.f5d554b4f952.

- This article focused on consumer beliefs about label dates.

Food Date Labeling Act of 2016. (n.d.) Retrieved June 24, 2017 from <https://www.congress.gov/bill/114th-congress/house-bill/5298>

- This bill establishes requirements that: (1) address food waste that occurs when people throw out fresh food because of their confusion over the meaning of expiration dates on food labels and whether or not the food is still safe to eat, and (2) standardize quality date and safety date food labels. Producers, manufacturers, distributors, or retailers that place a date label on food packaging of a product (food labelers) must use the phrases "best if used by" to indicate food quality and the phrase "expires on" to warn of food that may be unsafe to eat after a specified date. While labelers may voluntarily choose to include a quality date on packaging, they must include a safety date on ready-to-eat products.

Food Product Dating. (n.d.) Retrieved on June 24, 2017 from https://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/food-labeling/food-product-dating/food-product-dating!/ut/p/a1/jvJtb4IwEP418A1bwBldQhbmJL5MnDNO5MtSoJQuSF1bJduvX2FzUaObbZpe757rXZ-nIAQB CAu0owRJyqU1-ew8wrnsGP2-nA865keHPkv89mk34fdxY0CrP8A-PaV-ReGC__LH19RwOLT_pSAsEQyM2iRMhAQLA1UiApzAYKUscQQKMxYw0hRLA2RYSz3gRxFOKcF-TmWnCvvhUkURZecKxAetwVNNUe-vWgPx74NZ-1TwBnevgGXiVEvJzmLGpHWbhHZXfVEjPMMW9tuXJnUpbiVoMarKqqRRgjOW7FbKNBFb4TyJE6j6Xzpr87OhY8doQu2JbH2KlwpMeJY-k7nDgQZcvJoKIji1Fm-rulmwX3dns6Ga7z54fJaO4RUk7dga5udZqammm7mml59apLp4KK1IYkSDWxa5w1xvJKxiXKa6tG1LtkJY0b61AUrMhtfmQdOJDufHcg3m9oL59mnuMpY0KC4JgeUG6WweejO4T0abPqCvcL8GjYbg!!/#3

- This website answers a variety of question about what food product dating is and how the date relates to your food.

Buzby, Jean C. and Jeffrey Hyman. ["Total and Per Capita Value of Food Loss in the United States."](https://doi.org/10.1016/j.foodpol.2012.05.001) *Food Policy*, 37(2012):561–570. Retrieved June 24, 2017 from <http://www.sciencedirect.com/science/article/pii/S0306919212000693>.

- This article puts food waste into numbers related to how much food was in stores and didn't make it into consumers' homes.

Problem Statement

Draft 1

Food waste is prevalent in the United States- about 1/3 of food is thrown away annually. This problem is widespread across the globe, but the United States is the number 1 offender. This has been an ongoing problem and occurs in all demographics. This is a valid problem, as this waste amounts to \$3 trillion.

Draft 2

Use by, sell by, and best before by dates are confusing to consumers. This leads to an increase in food waste, since these dates do not refer to food safety, only food quality. Roughly 20% of consumer food waste is attributed to food labeling dates (pbs.org).

Draft 3

Standardization of food date labels are needed in the United States. Food companies decide what their date labels are suppose to communicate with consumers. Typically these dates refer to when the quality begins to decline, not safety, as most consumers think. This thinking leads to increased food waste. In the United States, 1/3 of food is thrown away, with 20% of it being contributed to misunderstanding of food waste. This leads to a \$3 trillion wasted because of perfectly good food being thrown away.

Draft 4

Food loss in the United States is very costly due to expiration date misconceptions. In 2008, Food Loss totaled \$165.6 billion. The top three food groups with the most loss was meat, poultry, and fish (41%), vegetables (17%), and dairy (14%). This problem is costing the United States a significant amount of money.

Draft 5

Product dating, open and closed dating, causes food waste among consumers. Open dating refers to a product best of quality date and helps stores determine shelf life. Closed dating is a product's date and time of production on the label by using a series of numbers and letters. Just these two dates on a label cause confusion and the product to be thrown away, which accounts for 20% of food waste.

Draft 6

Consumer misconceptions over the meaning of expiration dates results in increased food waste and disregard to wholesome food. The dates on food are for food quality and not for expiration. Consumers should evaluate food quality on their own at any time while having he food. A third of food is wasted because of the confusion on what the expiration date actually means.