Four for Metaphors Using META4

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Abstract
The structure and complexity of traditional text-based surveys leave surveyors struggling to gain definitive insights into patterns or trends about their target demographic. Using a new, innovative survey method that incorporates images into surveys, the group will test the hypothesis that image-based surveys uncover facts and truths that are not uncovered by text-based surveys. The use of images will elicit metaphorical responses from participants. Metaphors and metaphor elicitation utilize and blend both qualitative and quantitative evaluation for deeper insights. The goals of this project are to design an image-based survey to conduct evaluations on Northeastern University students to uncover deep feelings and attitudes toward the Co-op program, as well as to create an effective analysis method for data collected through the survey. In addition to the image-based survey, a text-based survey will be designed and used as a control survey for comparative purposes. In contrast to the text-based survey, the image-based survey incorporates an image database of approximately 500 stock photos for participants to use as a basis for their response to a survey question. The approach taken to collect data from participants was with the use of survey incentives. After many rounds of survey distribution, the team gathered over 200 completed surveys. The large sample size allowed for a deep qualitative and quantitative statistical analysis to be performed. The team analyzed the data quantitatively in terms of word count, common questions, time elapsed and favor analysis. The results showed that the image-based survey is not only more insightful than the text-based survey, but also more favorable to participants as well. The team also did a qualitative analysis using word clouds. These results supported the quantitative results, showing that the image-based survey was able to uncover facts not uncovered by the text-based survey. This is an ideal outcome, in which the students enjoy doing the image-based survey, and the survey distributors receive more extensive, varied, and exhaustive results.

“The co-op program is special because it takes many twists and unexpected turns, but in the end it directs you towards where you need to be in the future.”

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The Need for Project

Traditional text-based surveys do not uncover valuable insights that image-based surveys have the potential to. The structure and complexity of traditional text-based surveys leave surveyors struggling to gain exhaustive insights into patterns or trends about their target demographic. Using a new, innovative survey method that incorporates images into surveys, the group will test the hypothesis that image-based surveys uncover facts and truths that are not uncovered by text-based surveys. The use of images will elicit metaphorical responses from participants. Metaphors and metaphor elicitation utilize and blend both qualitative and quantitative evaluation for deeper insights. The goal of this project is to research and identify key differences in metaphor surveys compared to traditional text-based surveys.

The Design Project Objectives and Requirements

Two surveys were created and administered: a text-based survey and an image-based survey. The hypothesis set forth is that students who take the image-based survey will provide more extensive, varied, and exhaustive feedback than those who take the text-based survey.

Design Objectives

The main objective of this project is to conduct evaluations on the Northeastern University Co-op program through the use of two surveys: a text-based survey (control survey) and an image based survey (test survey). The hypothesis set forth is that students who take the image-based survey will result in more extensive, varied, and exhaustive feedback than those in the control-based survey. The total sample was 200 students, with roughly half taking each survey.

Design Requirements

The sample size was 200 students, with roughly half taking each survey. Surveys were administered randomly, and students who completed the survey were rewarded with a $5 Dunkin Donuts gift card for their participation. In order to be allowed to take the survey, participants must attend Northeastern University and have completed at least one co-op, or else they would be screened out.
Design Concepts Considered

We developed multiple survey design iterations with the help of Protobrand and through extensive research. The final survey design employed effective, appropriate and proven survey techniques.

The key to reaching the initially stated objective for the design project was to create and implement a fluid and efficient survey design that would allow for the collection of usable data. Multiple iterations were considered during the design phase of the survey. The iterations differed by question type and content. In order to choose which survey design was most efficient, the team consulted with the corporate sponsor Protobrand, an independent marketing company who specializes in survey design.

The main goal was to set forth guidelines on what should and should not be included in the survey design. These guidelines grew after every new survey design. For example, after the first iteration of the survey design, Protobrand notified us of mistakes such as asking double-barreled questions, leading questions or biased questions. After multiple iterations and lots of research on survey design, the team was able to build a survey that was unbiased and that employed effective, appropriate and proven survey techniques. The final design allowed subjects to freely answer the survey any way they wanted, which allowed for the most optimal data to be collected.

Recommended Design Concept

On average, image-based survey respondents wrote more, had a greater response variety, and enjoyed the survey more than students who completed the text-based survey.

The factors that were analyzed were both qualitative and quantitative in nature. Theme variety, word count, length of time, frequency, and survey favor were all variables that were examined.

The two final survey designs both included one identical text-based question towards the end, used to test the hypothesis that participants that completed the image-based survey would write more than those who completed the text-based survey. On average, image-based survey respondents wrote 45% more than the control survey respondents. On a broader spectrum, the image-based survey had a larger variety of responses than the text-based survey. Whereas the text-based survey had the same responses over and over again to the same question. For example, two themes (experience and networking) made up 50% of all responses for the text-based survey, whereas it took eight themes (opportunities and career growth being the most frequently used) to reach 50% in the image-based survey.
Though naturally time-elapsed took longer in the image-based survey, it was discovered that there was a tighter variance for the text-based survey times than the image-based survey times. The hypothesis around this is that students who complete the text-based survey are picking answers that come top-of-mind and rushing to try to get through it. Image-based survey respondents had the potential to spend a longer amount of the time in the survey, and write lengthier responses. The participants of the image-based survey wrote 45% more words on an identical question. Through a metric called Survey Favor Index, it was discovered that students preferred the image-based survey to the text-based. This was proven to be significant at the 5% alpha level using a t-test.

The key advantage of this image-based survey is that it extracts more extensive and exhaustive responses from a participant. The fact that participants wrote more, had a larger variance of time to complete, and enjoyed the survey more than the control survey support the fact that this survey design is an extremely effective tool for gathering in-depth data about the topic being surveyed.

**Financial Issues**

The group used $1,000 of the Capstone budget to purchase 200 Dunkin Donuts gift cards that were each worth $5. The gift cards were utilized to increase survey participation.

Protobrand Sciences, Inc. allowed the Capstone group to use their online META4 Insight survey development tool at no cost. Therefore, the final survey designs do not have any costs associated with them. The main expense of this project was the $1,000 spent on survey incentives. After researching successful survey distribution techniques, the group decided to use money from the Capstone budget to purchase 200 Dunkin Donuts gift cards, each worth $5. The cards were used to increase survey participation.
Recommended Improvements

From our findings, we believe that there is great opportunity to survey healthcare patients using image-based surveys. These surveys could help to unlock thoughts and feelings of patients that are hard to articulate, which would allow healthcare givers to better tailor the quality of care.

The group was initially planning on applying the findings from the co-op surveys to the healthcare industry. The original plan was to work with Partners Healthcare to survey diabetes patients on the quality of care they receive. However, due to time constraints, we were unable to make this happen.

We feel as though there is great opportunity to survey healthcare patients using image-based surveys. The results that we received from the co-op surveys lead us to believe that healthcare givers and patients could really benefit from the use of image-based surveys. Image-based surveys could help to unlock thoughts and feelings of patients that are hard to articulate.