

Evaluation Report: Utilizing Learning Analytics to Improve a Text-Based Simulation

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Abstract

Learning that takes place even partially online can generate a host of passively collected data to inform student behaviors and the educational environment. Some of what might be lost in real-time visual feedback between student and instructor during online instruction can be retained by engaging in course data and pursuing learning analytics. New innovations in learning management systems (LMS) inherently collect student activity and participation data and package it nicely in easy-to-use dashboards. Leveraging student information systems (SIS) and campus reporting tools can assist to enhance these learning analytics and tell a quantitative story of student engagement and success in a course. In this evaluation report, learning analytics were deployed to examine the effectiveness of a text-based negotiation simulation in a career development (CD) course. Passively-collected data from Google Forms and Canvas was combined with demographic information from the SIS and campus reporting tool to create a comprehensive view of how the simulation was used in Fall 2020 across nine CD courses. Interpretations of data are presented through the use of visualizations and charts in Microsoft Excel, and enhancements were made to the existing negotiation simulation for the Summer 2021 term.

Keywords: learning management system, Canvas, learning analytics, Google Forms

Introduction

In Fall 2020, all career development (CD) classes in the Carl H. Lindner College of Business introduced the Leveled-Up Learning Assignment (LuL). This assignment acknowledged that while comprehensive, the course cannot address all areas of career development. Students were asked to select one of five assignment options that best fit their needs including reviewing a job description, drafting a cover letter, conducting an informational interview, identifying career needs/wants, or completing a negotiation simulation (NS). Each assignment required a similar effort and time commitment with the shared goal of offering the student the opportunity to select the assignment most beneficial to their needs.

The NS, still in its pilot form, is a text-based Google Form (see Appendix A) embedded in a Canvas page. Created like an escape room or breakout room, participants were asked to review a job offer, complete a series of questions correctly, and provide inputs where solicited in order to finish the activity. Upon completion, the student would submit the confirmation email they received to Canvas allowing for grading to occur. The timing of the simulation occurred after students completed a module on job-offer negotiation.

In Summer of 2020, all of the CD courses in the Lindner College of Business went online in an asynchronous format due to the COVID-19 Pandemic. This switch made it very difficult to assess in real-time how the students were doing in the course. Instructors felt disconnected from students, and beyond assignment grades, could not understand where students were at cognitively. Sclater (2017) suggested that “as education moves increasingly online, teachers may lack the visual clues that helped them to identify students who were insufficiently challenged, bored, confused or who were failing to attend” (p. 11). Although the simulation itself worked

successfully, it is unclear if its objectives were met. Evaluating the simulation using learning analytics has helped provide insight as to what happened in the Fall 2020 iteration.

Instructional Design Model

Significant research was completed on the NS through the creation of a grounded design in the Fall of 2020 during IDT 8020, Learning Sciences. Grounded design as an instructional design model which ensures that the instructional goal is met with the appropriate methodology (Hannafin et al., 1997). Although apparent in all epistemological approaches, mis-alignment, or “insufficient grounding” (p. 102), is prevalent in constructivist approaches to instruction, such as the NS. In the grounded design, I examined the NS through the psychological foundation of Bandura’s (1982) Self-Efficacy theory and proposed enhancements by applying the pedagogical foundation of Keller’s (2010) ARCS model. As a goal of the NS is to increase students’ likelihood to participate in a job offer negotiation, these two motivational-based theories serve to “support the creation of powerful learning environments” (Hannafin et al., 1997, p. 103). Additionally, the context surrounding the career-development experience for students in the Lindner College of Business, including technology, culture, and pragmatic concerns, was also investigated. Much of the context is featured at different locations throughout this report. All five foundations were considered for the grounded design as their similarities needed to align to support strong instruction. The improvements noted through the grounded design were combined with the findings from this evaluation to thoroughly strengthen the NS and increase its impact in the CD classes.

Learning Theory

As reported in Trimboli et al. (2020), students in the Lindner College of Business routinely rank job-offer negotiation as their least-confident competency, at the beginning and end

of the course. This simulation was created to provide students with a mastery experience to increase their self-efficacy surrounding negotiation in a low-risk environment (Bandura, 1982). At the start of the NS, students assume the role of a candidate who recently received a full-time job offer. Students were then provided with a PDF job offer to review and base their in-simulation decisions on. The skip-logic in the form prevented incorrect answers on multiple-choice selections. If students initially answered incorrectly, they were re-directed and provided instantaneous feedback in order to answer the question correctly. This is in alignment with Gagné's (1985) events of instruction and providing timely feedback. Grading was mostly done based on completion, although students were asked to expand or alter the text inputs if necessary in Canvas.

While the negotiation simulation was not an artifact created in a course in the Master of Education in Instructional Design and Technology program at the University of Cincinnati, it was inspired by concepts learned in various ID classes. The NS aligns with a constructivist lens, and through this active learning activity, students are able to make sense and meaning of the simulated experience (Driscoll, 2014). Gamification was specifically chosen for the NS because of its ability to increase the motivation of the learners, and it aligns with the attention elements of Keller's (2010) ARCS model (Kalmpourtzis, 2018). While the escape-room style itself aims to capture learner's attention, elements of inquiry arousal should sustain it throughout the NS.

Data Analysis and Results

Sample

Samples in learning analytics can consist of current students participating in the educational context (Sclater, 2017). For this evaluation there were two samples, titled Sample A and B respectively. Sample A, the larger sample, included all students who completed a CD

course in the Lindner College of Business in Fall 2020 using analytics from Google Forms.

Sample B contained 20 students who took the simulation in a specific CD course and included both analytics from Google Forms as well as Canvas. For both samples, the Student Information System (Catalyst) and Reporting tool (CaRT) was utilized to provide the gender and class year demographic data in the submitted Google Form. Table 1 below provides a summary chart of each sample in this evaluation.

Table 1

Evaluation Sample Population Descriptions

| | <i>Sample A</i> | <i>Sample B</i> |
|------------------------------------------------|------------------------------|------------------------------------------------|
| <i>Data Source Used</i> | Google Forms, Catalyst, CaRT | Google Forms, Canvas Analytics, Catalyst, CaRT |
| <i>Total Sample Size</i> | 390 | 20 |
| <i>Sample completed Negotiation Simulation</i> | 163 | 15 |
| <i>Sample completed Other LuL Choice</i> | 227 | 5 |

Data Analysis

Data for the NS was pulled from the Learning Management System (Canvas), Google Forms, the Student Information System (Catalyst) and reporting tool (CaRT) ensuring the most essential sources were included (Gašević, et al., 2016; Sclater, 2017). Logged learning activity data serves as “key sources” (Sclater, 2017, p. 79) for learning analytics and were extracted from Canvas and Google Forms. Both Catalyst and CaRT provided demographic information. While some demographic information can be irrelevant for learning analytics, this evaluation included both students’ gender identity and class year to supplement the learning activity data as it was linked to student assignment choice.

Additionally, Sclater (2017) acknowledged that many analytics- based studies do not include such demographic information as it is not available to the researchers. For this evaluation, I accessed core university information based on my staff position. After submitting a HRP-503N Not Human Subjects Research form for review with the University of Cincinnati's Institutional Review Board, it was determined that this study does not need full review. This step was key as protecting student data and privacy is essential to the future use and acceptance of learning analytics.

The process used for data collection and synthesis is outlined in Table 2.

Table 2

Process for Data Collection

| | Task | Description |
|---------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1 | Collect | Created a Google Sheet using the responses collected from the Google Form. This was automatically generated and accomplished by selecting the Google Sheet icon on the form response page. |
| Step 2 | Collect | Developed and ran a query in CaRT with the following fields: <ul style="list-style-type: none"> - UC ID - Student First & Last Name - Gender - Class Year - UC Class (Filtered to "BA 1080, BA 2080, BA 2081") - Term Code (Filtered to "2208") - Grade |
| Step 3 | Clean | Downloaded the results into Microsoft Excel (Titled "Workbook 1", Sheet Labeled "Sample A") and added a blank column for "Completion of Negotiation Simulation." |
| Step 4 | Join | Using the Google Sheet, copied all values into Workbook 1 on a new sheet. Used VLOOKUP to move values from the Google Sheet into column "Completion of Negotiation Simulation." Copy/Pasted sheet values to hold the VLOOKUP information. |
| Step 5 | Clean | Removed identifying student information (Name and UCID). Labeled each student numerically starting from 1. |
| Step 6 | Collect | Created a second sheet in the workbook titled "Sample B". Filtered the Sample A sheet to show data of students in BA 2081. Copied this information and pasted it into the Sample B sheet. |

For Sample B, marked “1” in a column labeled “Completed NS?” if they completed NS. Marked “0” if they completed a different assignment. This was used for correlation. Added an additional column to include their selection if not NS, titled “LuL Assignment Choice.” This was manually entered from the Canvas Speed Grader. Students who did not complete LuL were removed from the workbook. Saved for analysis.

| | |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 7 Collect | <p>Opened a new Workbook titled “Workbook 2.” Entered in Sample 2 information for Page Views from New Analytics. Fields included:</p> <ul style="list-style-type: none"> - Knowledge Check: Leveled-Up Learning - Informational Interview - Job Description Review - Negotiation Simulation - Cover Letter - Career Ingredients <p>Saved for analysis.</p> |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Results

Collected data was analyzed to find potential answers to the questions posited in Table 3.

Following Table 3, results for each evaluation question will be presented.

Table 3

Questions to be Explored through the Evaluation Process

| Evaluation Question | Why it’s being asked | How it was collected |
|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| 1. What is the gender breakdown of students selecting the negotiation simulation? (Gender Breakdown) | While the simulation is meant to be beneficial for all students, we know women need more support building self-efficacy in negotiating (Babcock & Laschever, 2007; Lipman, 2018). If more men than women complete the simulation, we need to work on encouraging female students to opt-in to this selection. | Samples A. Data from the Google Form and Canvas was be compiled with demographic information from CaRT and Catalyst. |
| 2. Does class year factor into selection? (Class Year) | Negotiation is a subject that may not have relevance for younger students, however, it is not taught later in their careers. Keller (2010) noted that students must feel | Sample A. CaRT/Canvas data was combined with information from the Google Form results. Class year was |

| | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| | personal relevance to the topic to experience motivation to learn. If a disproportionate number of younger students avoid the simulation, there may be a gap in ability later. | analyzed against selected assignment choice. |
| 3. What percentage of students who completed LuL assignment selected the NS? (Student Assignment Choice) | One of the goals of the NS was to provide a mastery experience for all students. If a disproportionate number of students avoid the NS, then it is not meeting its objective. | Sample B. Data from Canvas New Analytics. Both page views and actual submissions were compared. |
| 4. Is there a relationship between selection of the NS and success on negotiation-related questions on the final exam? (Quiz Score Correlation) | Ideally, the NS would improve self-efficacy, which cannot be examined through this plan. However, the increased opportunity to practice should equate to increased self-efficacy beliefs, influencing behaviors (Bandura, 1982). This ideally would result in higher exam scores for specified questions. | Sample B. Canvas. Student choice and final exam scores on negotiation related questions were compared to understand the relationship. |

Gender Breakdown

Learning analytic data for gender was compiled by combining demographic data from CaRT with submissions in the Google Form submissions of the NS. Table 4 outlines the percentage of male and female students in Sample A that chose to complete the NS over the other LuL options.

Table 4

Gender Breakdown of Students Selecting the Negotiation Simulation in Sample A

| <i>Gender</i> | <i>Total # in Sample</i> | <i>Completed NS</i> | <i>Percentage Completion of NS</i> |
|----------------------|---------------------------------|----------------------------|-------------------------------------------|
| <i>Female</i> | <i>228</i> | <i>54</i> | <i>23.6%</i> |
| <i>Male</i> | <i>162</i> | <i>109</i> | <i>67.2%</i> |
| <i>Non-Binary</i> | <i>0</i> | <i>0</i> | <i>0%</i> |

Note that students identifying as a gender other than male or female were included in this evaluation. As there were no non-binary students in the CaRT data from Fall 2020, the criterion will not be referenced past Table 4.

Class Year

Student class year from Sample A was collected in the same VLookup function used for gender data. Student submissions in the Google Form were matched with a CaRT query. Class year for undergraduate students at the University of Cincinnati is determined by earned credit hours, and not the number of years they have enrolled. Table 5 outlines the credit hour- standing ratio for reference.

Table 5

University of Cincinnati Student Class Year Determinations

| <i>Class Year</i> | <i>Earned Credit Hours</i> |
|--------------------------|-----------------------------------|
| <i>Freshman</i> | ≤ 30 |
| <i>Sophomore</i> | 31-59 |
| <i>Junior</i> | 60- 89 |
| <i>Senior</i> | ≥ 90 |

Figure 1 represents the breakdown of total students for each class year in Sample A against the number of students in that class year who completed the NS. Table 6 presents this information in percentage form.

Figure 1

Class Year Breakdown of Sample A

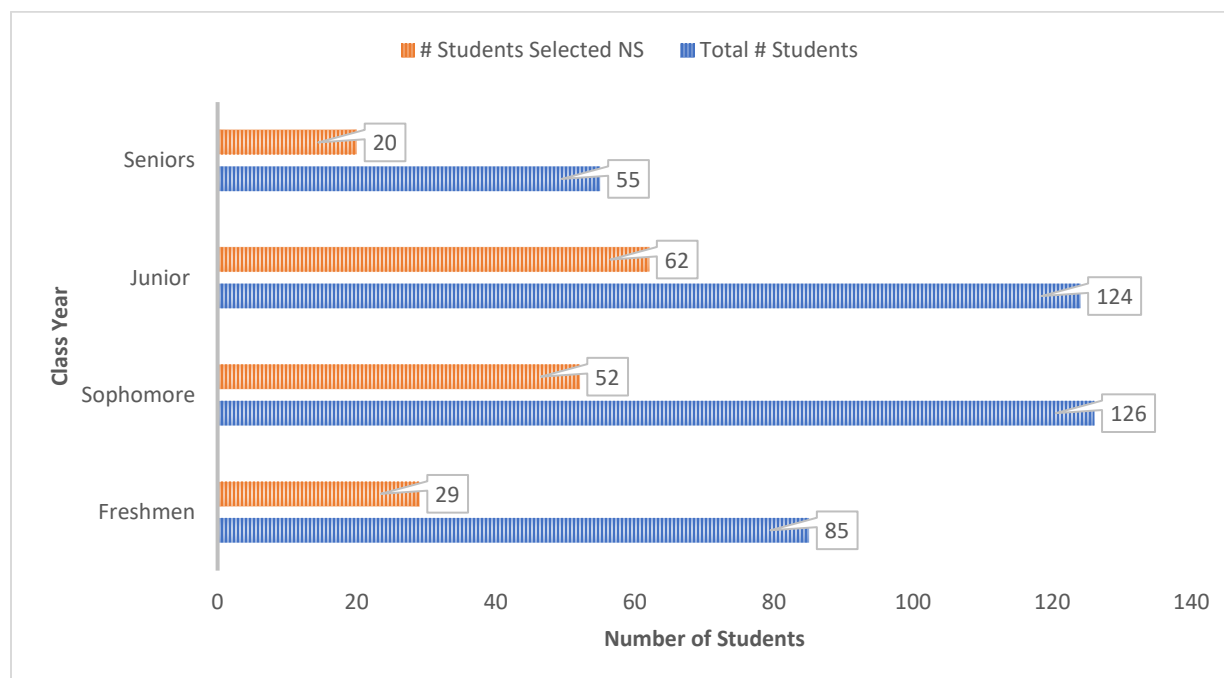


Table 6

Percent of Students in Each Class Year Who Completed the NS

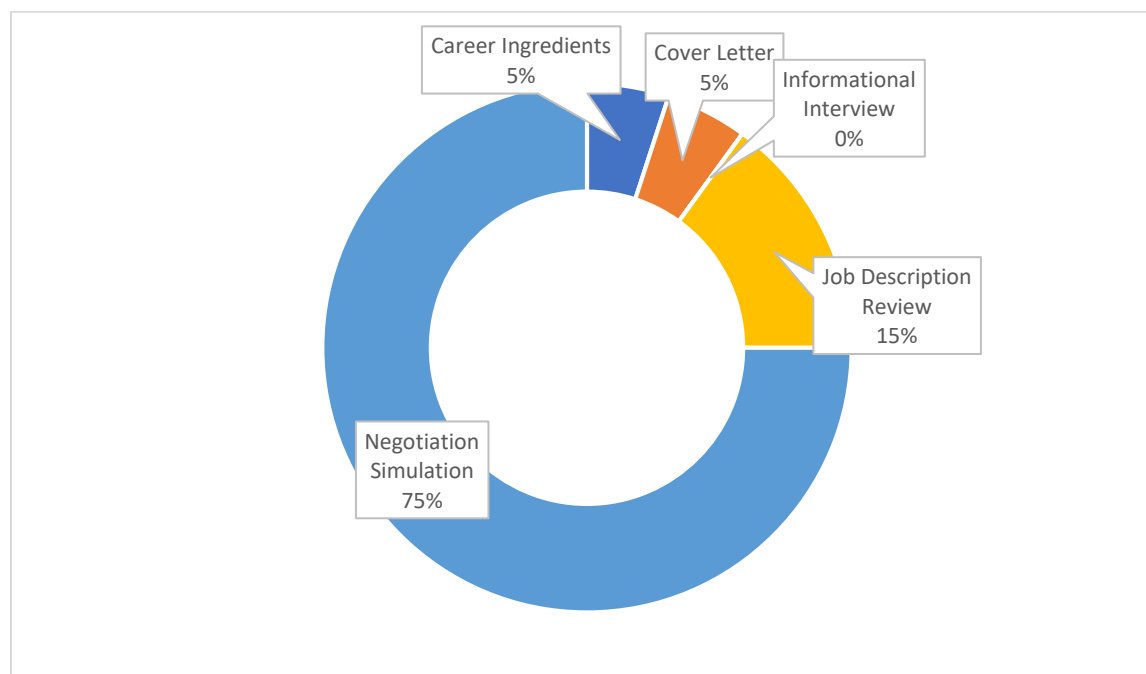
| <i>Class Year</i> | <i>Earned Credit Hours</i> |
|-------------------|----------------------------|
| <i>Freshman</i> | <i>34%</i> |
| <i>Sophomore</i> | <i>41%</i> |
| <i>Junior</i> | <i>50%</i> |
| <i>Senior</i> | <i>36%</i> |

Student Assignment Selection

The next two evaluation questions look exclusively at Sample B. Although a smaller number, this sample contained more information as this was my course in Fall 2020. I was able to access the course in Canvas and pull learning analytics from the New Analytics features. Additionally, I was able to record what other options students selected for the LuL assignment if not the NS. Figure 2 below visualizes the student selections.

Figure 2

Chart of LuL Assignment Choices for Sample B



Finally, I included student page view analytics directly from Canvas to provide a deeper insight into student assignment choice. In a new Excel workbook, I first noted overall page information from Canvas New Analytics under the Weekly Online Activity tab. On the resources portion of the page, instructors can view how students have interacted with various course components. Table 7 outlines the student use for the LuL Assignment.

Table 7

Information from Canvas for Leveled-Up Learning Assignments

| <i>Student</i> | <i>Page Views</i> | <i>Participations</i> |
|----------------|-------------------|-----------------------|
| 25 | 175 | 18 |

Variations in the participation number (compared to the overall student number in Sample B) is a result of how students submitted the assignment. There were two students who completed the NS, but submitted the assignment outside of canvas. These two students have been captured in the overall sample.

Secondly, each option for the LuL was recorded in Table 8 and visualized in Figure 3.

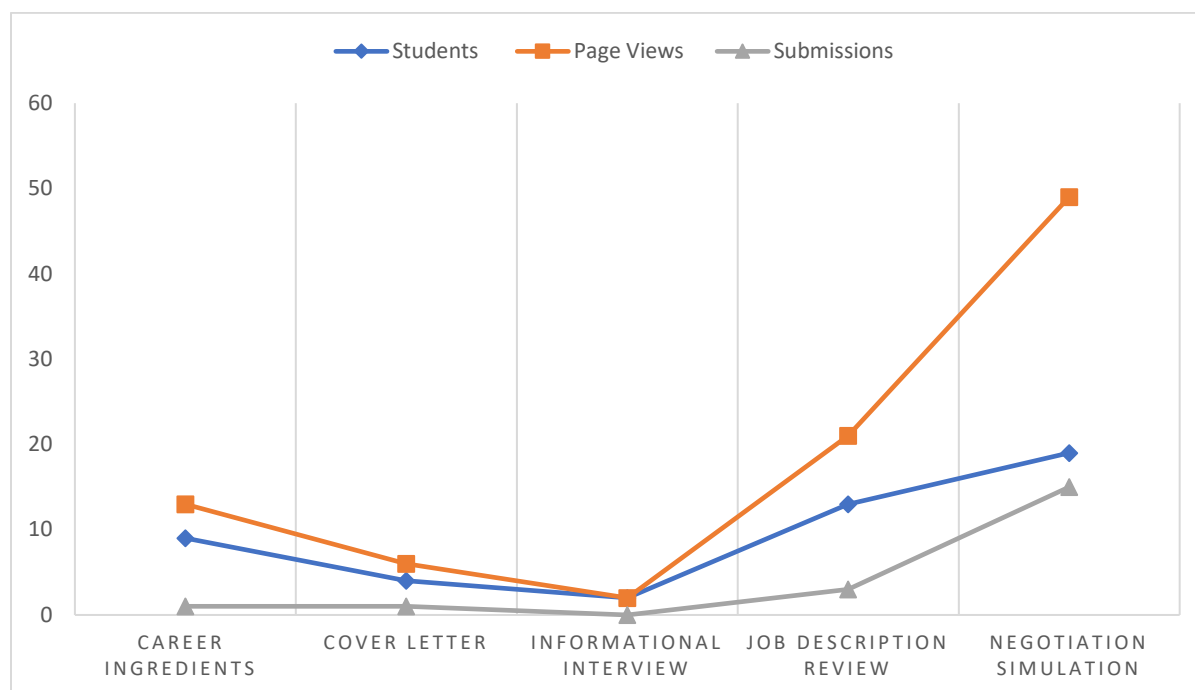
Table 8

Canvas New Analytic Data for LuL Choices in Sample B in Table Form

| <i>Assignment Choice</i> | <i>Students</i> | <i>Page Views</i> | <i>Submissions</i> |
|--------------------------------|-----------------|-------------------|--------------------|
| <i>Career Ingredients</i> | 9 | 13 | 1 |
| <i>Cover Letter</i> | 4 | 6 | 1 |
| <i>Informational Interview</i> | 2 | 2 | 0 |
| <i>Job Description Review</i> | 13 | 21 | 3 |
| <i>Negotiation Simulation</i> | 19 | 49 | 15 |

Figure 3

Canvas New Analytic Data for LuL Choices in Sample B



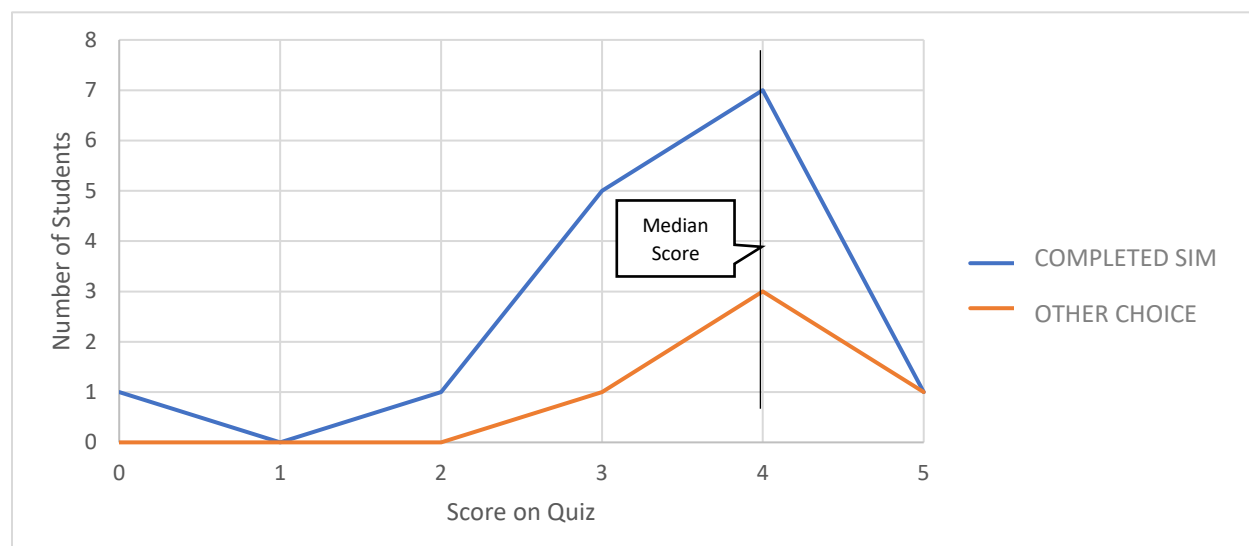
Quiz Score Correlation

The Fall 2020 Canvas course was the main source of data for this last evaluation question. This question required a different process for analyzation and correlation. First, results of the Job Offer & Negotiation quiz were downloaded directly from Canvas. This data was added in to the second sheet in Workbook 1 using a VLookup function. Correct responses were given a score of 1, incorrect responses were given a 0. A total column was added, and students in Sample

B could have a total score out of 5. Figure 4 below illustrates the correlation of student point total on the negotiation-related quiz questions against their peers who completed a different assignment. Students who completed the NS had the same median score as those who chose another option.

Figure 4

Line Graph Comparison of NS Completion to Quiz Score



Note. Multiple students in Sample B had the potential to obtain the same quiz score.

Interpretations and Recommendations

Gender Breakdown

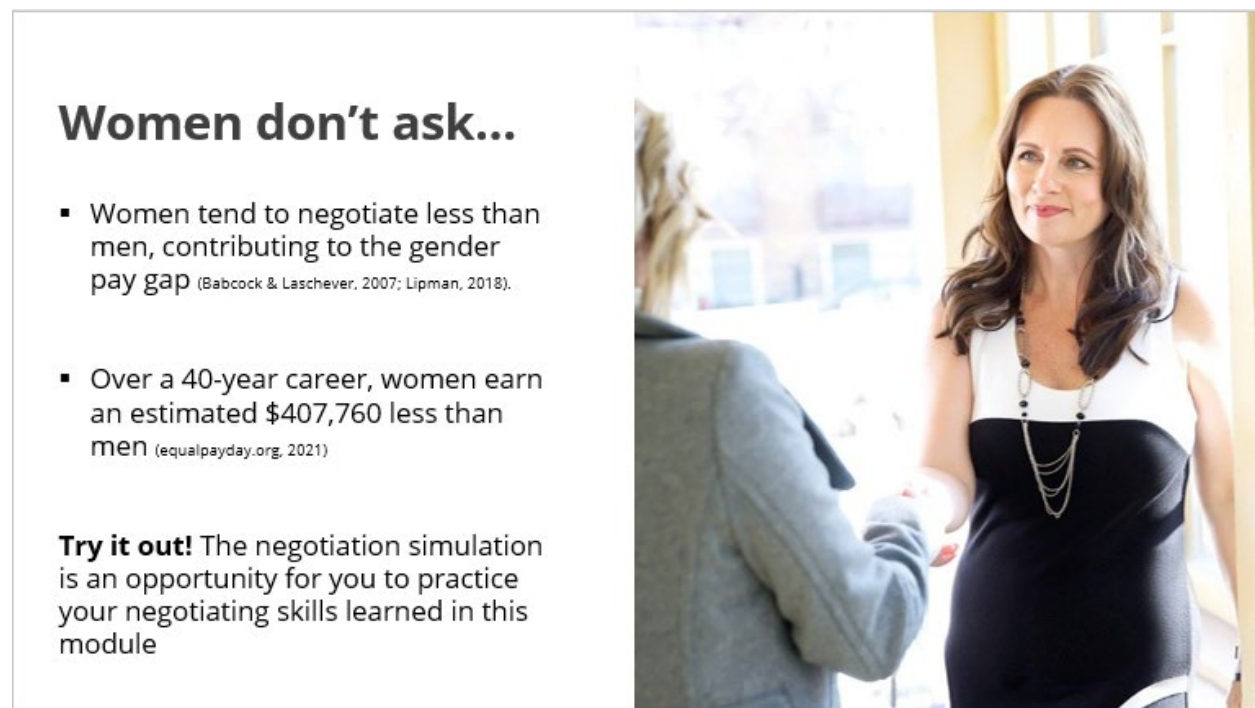
Evaluation question one examined the gender breakdown of students in Sample A who selected the NS over other choices in the LuL Assignment. Female students comprised of 58.4 percent of Sample A. This is actually higher female representation than in the College of Business, which consists of 33 percent female students according to Fall 2019 data (Office of Institutional Research, 2021). Despite the majority female presence in Sample B, only 23.6 percent of female students chose to complete the NS. This finding is very significant as one of

the aims of the NS was to deliver a strong mastery experience especially to female students to bolster their negotiating skills.

In order raise awareness of the simulation and the need to practice, a call to action was made in the lecture materials for the Job Offer Management module (Figure 5). This new slide will appear in Summer 2021 course materials and is situated right after discussing what items are negotiable and before instructing students how to negotiate. This placement is strategic and aligns with Keller's (2010) ARCS model. The goal is to capture female students' attention and normalize negotiation before describing the process. This placement will spark relevance for female students and engage them in the remainder of the lecture. Additionally, I included a small call-out to the NS at the base of the slide. This will prompt the instructor to raise awareness of the practice opportunity.

Figure 5


New Slide Addition into Job Offer Management Lecture Deck



Women don't ask...

- Women tend to negotiate less than men, contributing to the gender pay gap (Babcock & Laschever, 2007; Lipman, 2018).
- Over a 40-year career, women earn an estimated \$407,760 less than men (equalpayday.org, 2021)

Try it out! The negotiation simulation is an opportunity for you to practice your negotiating skills learned in this module



Class Year

Sample A was considered for this evaluation question. It includes representation from all class years as the CD classes are required for students to graduate. It is worth noting that while students of all class years can take the CD classes, they are targeted to freshmen and sophomores. Juniors and Seniors are typically taking the course to fulfill graduation requirements, as they somehow avoided taking the class their first or second year.

The assumption made for this evaluation question was that the junior and senior students would be more likely to participate in the NS given they are closer to graduating, seeking full-time opportunities, and potentially negotiating. Keller (2010) noted that personal relevance is key in motivating learners, and the NS is more relevant to older students. While juniors did have the highest percentage of students that opted in at 50 percent, sophomore students were the next highest at 41 percent. Seniors only had 36 percent participation.

Freshmen represent the smallest percentage of participation at 34 percent. While any of the LuL options provide quality career development for students, they do not have another formal opportunity to practice negotiating outside of this class. A future consideration might include moving the NS to the Job Offer Management Module so all students have this practice opportunity.

Students could be making the choice to complete the NS or not based on a variety of factors. Upper-class students may feel as though they need to build competencies in other areas and skip the NS. Alternatively, students might find negotiating uncomfortable and avoid the practice opportunity, even if it is relevant (Babcock & Laschever, 2007). Ultimately, while this data is informative, no conclusive interpretations can be made.

Student Assignment Selection

The NS makes up the majority of student assignment choice for Sample B. Seventy-five percent of students selected this option over the alternatives. On one hand, this is a desired outcome. We want students to participate in the simulation. On the other hand, I want to gain a better understanding of what made students select the NS over other options. Page Views suggest that students did evaluate other options before ultimately deciding to complete the NS. The exact reason cannot be determined from the available analytics, but it is something I'm interested in investigating in future evaluation.

One minor change enacted for Summer 2021 is a statement to set expectations before students review the assignment options. At the top of the LuL assignment page a sentence informing students, "All assignment choices should take approximately the same amount of time and effort to complete" has been added (See Appendix B). This statement will hopefully encourage students to find the most meaningful assignment for to their professional development.

As proposed in the grounded design analysis of this artifact, the inputs for the NS were text-based. As of Spring 2021, students are required to also submit an audio recording of themselves practicing their negotiation ask. This serves not only to strengthen the mastery experience, but will also require more effort on the part of the students (Bandura, 1982). It will be interesting to review the learning analytics at the conclusion of the Spring 2021 semester to see if the page view analytics and submission choice suggest different findings after this addition.

Quiz Score Correlation

Results of a comparison between completion of the NS and overall score total on negotiation- related quiz questions indicate a slightly negative correlation. It is not significant as the correlation value of .269 is less than the value given for a sample size of 20 at .360 (Statistical Solutions, 2021). Additionally, the median score for both students completing the simulation or another option was four. This suggests that completion of the NS had no major effect on quiz performance. This correlation will be repeated in future iterations of the evaluation with larger sample sizes. In Spring 2021, there will be ~150 students in the sample, and I am interested to see if the correlation is repeated.

One thing to keep in mind is that quantitative data cannot tell the full story of what happened. It is informative, but cannot adjust for other variables at play that could affect the data. For example, the NS is graded based on completion (although some follow up is requested if students really missed the mark). Students could have completed the NS quickly, and without intentionality, avoiding the practice opportunity. They also could have skipped the lecture videos completely, creating a gap in knowledge. Finally, the quiz had two attempts allotted for students. Some students might have deliberately scored poorly, knowing they had a second opportunity (the second quiz grade was not considered as a part of this correlation). All of these possibilities serve as potential rationale for the negative correlation. Unfortunately, this data set cannot definitely present one underlying cause.

Other Findings

Duplicate Submissions

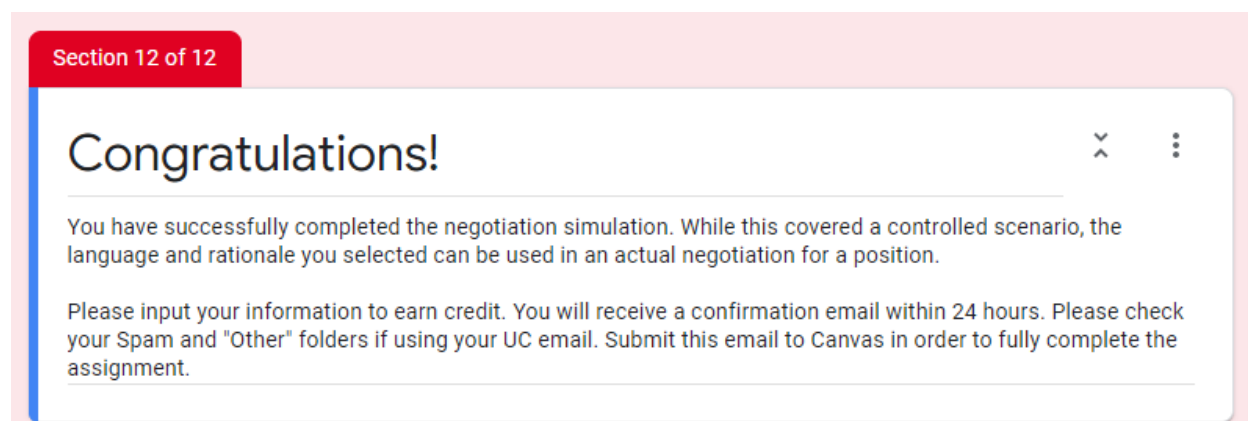
Before data analysis even began, I noticed that there were 32 duplicate values submitted from the Google Sheet NS download. Some students submitting two times, one student submitted five times. One piece of feedback that we received was that students did not get the

confirmation email, and then instantly resubmitted the NS. We initially dismissed this as an isolated occurrence, but seeing it on such a large scale makes it something that needs to be addressed. In addition, students submitting multiple attempts may skew future data collected on student performance (now that the skip-logic branching will record correct/incorrect responses).

To make this process clearer for students, I've added in additional language at the last step (See Figure 6). Before students input their information, I instruct them to check their Spam and "Other" folders for the form kickback. I also added in a caveat about waiting up to 24 hours for the response. Typically, students receive the email confirmation immediately, but we want to encourage patience and reduce multiple submissions. Additionally, by setting expectations that students may not receive the confirmation immediately, we're preventing dissatisfaction with the activity (Keller, 2010).

Figure 6

Instructions for Completing the Assignment



Time Stamp

I also noticed that the majority of students completed the NS the week it was due. The intent of the LuL assignment was to allow students the entire semester to complete their selected assignment so they could work ahead. In reality, any student who wanted to take the NS would

have to wait until later in the semester, as instructors requested they wait until after the Job Offer Management module. For Summer 2021 and beyond, the LuL assignment will be altered from being open the full semester to only becoming available after the Job Offer and Negotiation module. This will create an equal-timing opportunity for all options.

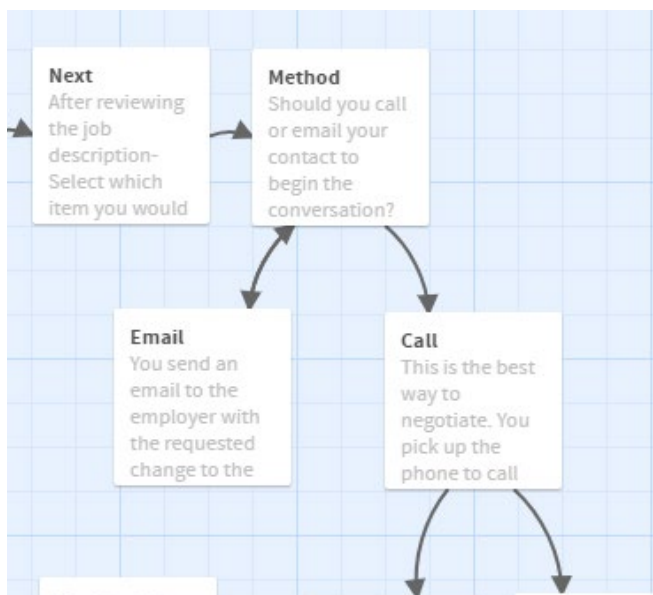
Future Evaluation and Next Steps

Student Performance

Performance data was not available through Google Forms due to the way I built the skip logic. Students could only select the correct answers to move forward in the simulation. Using Figure 7 as an example, when students incorrectly selected “Email” as an option, they were provided feedback and re-routed to the initial question to select the correct answer, “Call” to move forward. Even though they may initially select an incorrect response, they ultimately must answer correctly and avoid submitting a wrong answer.

Figure 7

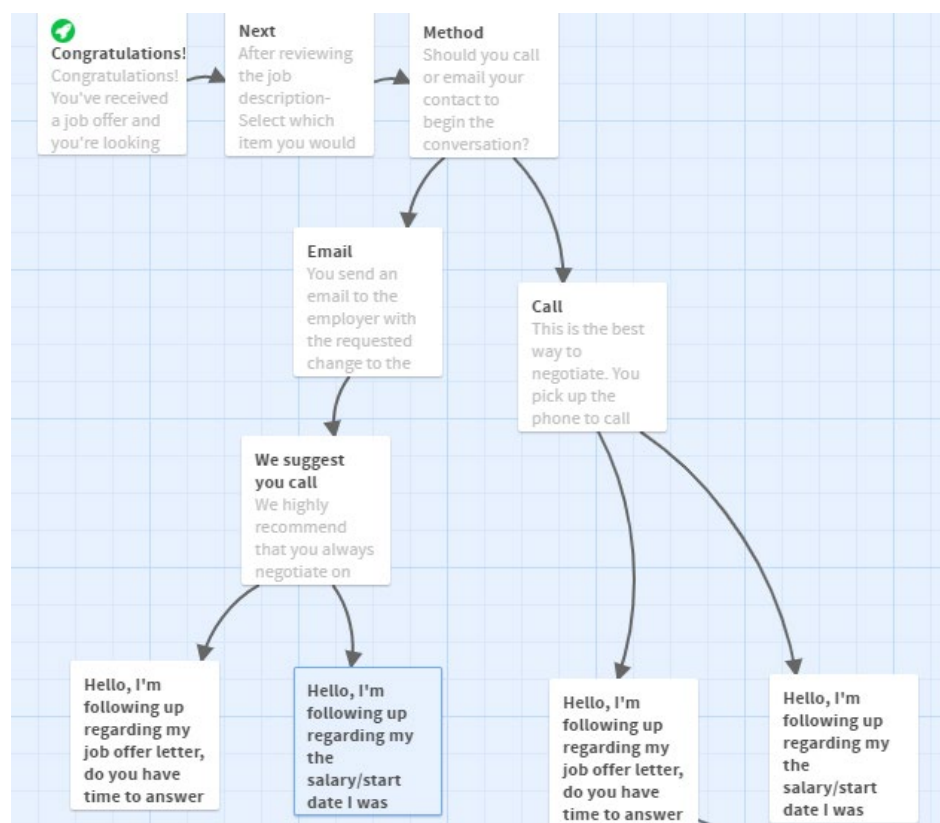
Demonstration of How the Skip Logic Works from Twine Storyboard



One alteration that was made in order to collect data on incorrect responses was to extend the branching. By moving users to a completely new branch of the simulation for an incorrect answer instead of looping them back to the initial question, data can be gathered to assess how they performed on their first responses. Additionally, each new branch will contain one additional step to provide feedback and correction. Figure 8 outlines the new branches implemented in the simulation. This will not affect user experience.

Figure 8

Demonstration of Corrected Skip Logic from Twine Storyboard



It is important to note that this data is not meant to be used to penalize the user. In fact, the skip-logic loop was created in order to provide students the opportunity to select the correct response and receive timely feedback for learning (Gagné, 1985). The data on incorrect

submissions will be used to better understand where students might be struggling in the simulation and address these issues through earlier instruction.

Simulation Duration

Another further direction would be the inclusion of a timer to identify how long students spent on the activity. Through further investigation, a timer is not a native feature of Google Forms. While a third-party timer could be installed in order to capture this data, I am choosing to move the negotiation simulation into Qualtrics for two reasons. First, the NS in Google Forms does collect student information. While the use of Google Forms has been approved for this use by Lindner IT, I am unsure if this will also extend to the non-Google extension. Secondly, Qualtrics accounts are provided for all UC staff members. By re-creating the NS in Qualtrics, all instructors teaching the course can have access to the NS. In the pilot, since I had primary access to the form in my Google account (and not all staff members had accounts), I often was accessing and checking if students submitted the form for instructors. Sharing the form in Qualtrics will alleviate this issue for me.

Finally, Qualtrics does have the ability to add a time collector feature easily and without an add-on. This will make accessing the amount of time students spend on the NS very easy and will also improve and inform future evaluations of the NS.

Reflections

One element that surprised me throughout this evaluation was the use of Canvas Analytic Tools at a deeper level than expected. When trying to correlate answers on exam with completion of NS I anticipated that I would manually sort through exam answers and input responses into Excel. Using the “Student Analysis” feature on the quiz page in Canvas I was able to download an excel report of all student’s exam answers and assign the designated point

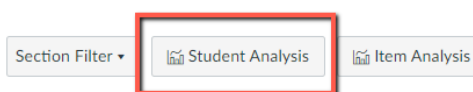
values. This took what would have been a few hour-long process and turned it into less than 30 minutes.

Figure 10

Student Analysis Canvas Analytics

Quizzes > Knowledge Check: Job Offer Management and Evaluation > Statistics

Quiz Summary



Additionally, there were a few unexpected enhancements made from non-analytic data. I found myself presenting solutions to problems where gathering analytics was not possible. For example, I was unable to pull and learning analytic data for student performance based on platform limitations. By thinking creatively, I was able to devise a method that would capture the data so future evaluations could address these questions more thoroughly, and ultimately continue to advance the NS.

Finally, although I do feel like the enhancements made as a result of this evaluation will serve to improve the NS, I am leaving with more questions than answers. For example, I have observed the class year breakdown for assignment choice and it did not meet my expectations and assumptions. I think this is the result of two things. First, the question is very broad. I could have asked “Do upperclassmen choose the NS more than younger students?” Secondly, this initial evaluation is not meant to provide conclusive answers. It allowed me to observe what happened this time, ask more questions, and keep improving. This evaluation process has been a strong example of the iterative design process and how instruction should constantly evolve with evaluation.

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Appendix A

The pilot negotiation simulation can viewed on Google Forms using this link:

<https://docs.google.com/forms/d/1HvAKKPEwi6LO9ifTaswhEtJ5zZh6LOdLiwFIYUxvCgE/edit?usp=sharing>

Appendix B

Summer 2021 Leveled-Up Learning Assignment

Pick an assignment from the list of options below. Not every student needs the same career development help. This module allows you to assess your current situation, and complete an assignment that matched your unique needs. Descriptions and links are below. Students can complete any option, and recommendations based on class year are given if you are unsure which option would be a good fit for you.

Assignment Options

All assignment choices should take approximately the same amount of time and effort to complete.

- [Job Posting Review](#) - explore the important pieces of a job description and assess how you qualify for the role and any potential skills gap you can close
- [Cover Letter](#) - get in-depth information about writing a solid cover letter and test your skills by writing a tailored letter for an existing job
- [Informational Interview](#) - gain industry knowledge and a solid relationship by interviewing a professional in your field of interest (*requires advance prep time to schedule a meeting*)
- [Salary Negotiation Simulation](#) - test out your salary negotiation skills through our simulation activity.
- [Digital Badging](#) - get a micro-credential in a area of soft skills desired by employers
- [Holland Codes | Career Exploration](#) - Find out your Holland Code and gain insight into which fields and environments you might work best in.

When you've completed your assignment, please submit it on [this page](#).

Upskilling Resources

- [Upskill your marketability to employers with these suggested resources - both general and by-major](#)