Kendra H Oliver
User Research Plan
09/08/2021

USER RESEARCH PLAN

CLIENT: Drug Discovery Online – Vanderbilt University

CLIENT DESCRIPTION:

The Drug Discovery Online program started in 2018 to increase the digital literacy of current students, showcasing the rich research expertise within the Basic Sciences, School of Medicine, and reaching additional students through creating online resources. Since our inception, we have targeted our efforts to develop 2-week mini-courses that cover a variety of topics key to drug discovery and development. Our goal is to create a service core to assist in online resource creation.

Vanderbilt University and Vanderbilt School of Medicine are world leaders in pharmacology, drug discovery, and drug development. Drug Discovery Online targets the design and construction of online programs for students interested in the pharmaceutical industry. We apply the latest approaches and state-of-the-art practices in online learning. Quality Matters (QM) is an international, U.S.-based non-profit organization specializing in standards, processes, and professional development for quality assurance in online and blended learning. QM tools and resources are regularly revised to reflect current research and best practices. The Drug Discovery Online program follows the QM rubric to maintain the highest quality of online materials.

BACKGROUND AND PRODUCT FEATURES(s):

Currently, we are building 2-week short courses. Drug Discovery Online is a series of non-credit online courses taught by leaders in the field that provide details into drug discovery and development science, concepts, process, and business. Students can catch up, get ahead, or pivot within the drug discovery and biotechnology sector
through these courses.

Many potential user types have unique functional needs, goals, and experiences. The two most clearly identified based on current data include advanced undergraduate students interested in pursuing a new career in drug discovery and a working professional who is interested in transitioning into a career in drug discovery but has extensive working experience.

The program aims to provide essential skills for academic scientists who want to advance their careers and those who wish to collaborate intelligently with external industry partners. Potential participants include research students, staff, and faculty at academic institutions nationwide. Participants will have completed or will be about to complete a bachelor's degree in a science or engineering discipline. Examining available resources, we have determined that our program would generate the most value to early-career scientists (undergraduate, graduate, post-doctoral researcher) interested in understanding the drug discovery process and who want to collaborate, interface with, or possibly collaborate with the transition into the pharmaceutical industry.

Alternative participants for the program could be those who are on the business side of the Pharma industry who are interested in learning more about the science of drug discovery. This type of participant may have an MBA or other business degree and may currently work in the pharmaceutical industry. However, they lack the scientific background to interface with scientists on drug design and development properly. By taking these targeted courses, this type of participant can build the scientific literacy to interface with scientists to promote effective communication and collaboration intelligently.

The online learning environment is rich with opportunities. There are several approaches available for delivering online courses and programs. Notable online course companies include Coursera, edX, and LinkedIn Learning. There is also the Academic Drug Discovery Consortium (ADDC) that has online courses available for members. Although there are many other platforms besides these three, the listed platforms offer insights into the market for an applied pharmacology program. Coursera provides universal educational opportunities by partnering with top universities and organizations to offer courses for which they charge $49/month, with some options for paid certificates and degree programs. edX offers interactive online classes and MOOCs (Massive Open Online Courses) from some of the world's best universities, colleges, and organizations. Depending on the course, edX courses are free or cost between $50-$99 per class; edX certificates are $299. LinkedIn Learning is a leading online learning platform that helps organizations increase learner engagement and develop relevant skills. These courses originate from Lynda.com, but by integrating with LinkedIn, these courses can deliver personalized recommendations based on LinkedIn profiles.

Overall, by comparing the enrollment number for publicly available courses, we have found that courses similar to the ones proposed enroll between 2,000 to over 20,000 participants per year per course. Here is a spreadsheet that compares courses and programs similar to this proposed. It was created by using the search words "Pharmaceuticals," "Drug Discovery," "Drugs," and "Healthcare" with the different platform search engines and the Google search engine; we then vetted the list for applicability.

We selected two specializations offered by Coursera for comparison. Coursera offers a "The Business of Health Care" specialization, which claims a rating of 4.6/5 (1,346 ratings) and 7,173-lifetime participants enrolled. This specialization consists of four courses: Financial Acumen for Non-Financial Managers, The Economics of Health Care Delivery, Management Fundamentals, and Health Care Innovation. The courses were created by faculty from the University of Pennsylvania. It is similar to our program because it merges the science of healthcare with the business of healthcare delivery but seems to be geared towards a different audience than our proposed audience (trained scientists in the biomedical sciences who wish to gain business and translatable pharmaceutical industry skills). Another Coursera program is the Healthcare Marketplace specialization offered by the University of Minnesota, which has 4.6/5 (1,315 ratings) and 12,760-lifetime participants enrolled. This set of course materials covers all of the major sub-sectors of the healthcare industry, including the physician, hospital, insurer, and medical technology markets. This specialization includes pharmaceutical and medical device innovations, healthcare delivery providers, the healthcare marketplace, and medical technology and evaluation. Again, this program does not seem to target trained scientists explicitly.

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Key factors that motivate the adult learner to enroll in online courses include job relevance, trust, alignment with learning goals, and learning through experience. Based on these four factors, we have a predicted market penetration rate (number of adult learners who would be interested in the program) of 1% due to the program's specialized nature and market completion. Most adult learners are anxious about adapting to and performing in a virtual learning environment. They also harbor negative attitudes about eLearning (due to bad courses they have taken in the past). Currently, online education is playing a significant role due to the COVID-19 pandemic, but even before the pandemic, students who took online courses that integrated online components grew slightly faster, to 17.6 percent in 2017 from 16.4 percent in 2016. And the proportion of all students who took at least one course grew to 33.1 percent, from 31.1 percent in 2016 for the entire student body population. More recently, for lifelong learning, key buzzwords such as micro-learning, virtual conferencing, asynchronous learning, pedagogical approaches that maximize teaching and learning cognitive theory, social learning, open education, delivery of some content as a marketing approach, alternative credentials, self-directed learning, self-publishing, and data-driven approaches to program design point to areas to consider for future development.

To calculate the market value of our proposed courses, we assigned each course a $199 cost regardless of whether participants enrolled in the certificate program or if they took the course as one-off learning opportunities. In the budget, we estimated a steady-state enrollment of 445 non-certificate participants per class (the $199/course cost was the same for everyone regardless of participant enrollment in the certificate program). Looking at online courses that are currently available in this space, our market volume is just over 100,000. With a modest 1% penetration rate, we could expect a market volume of 1,000 participants per year per course and estimate a market value of $199,000 per year/course.

However, the assumptions we are making about market penetrance are weak. Market penetrance is the major determining factor for program success; we may have some early adaptor enrollees that initially drive up enrollment rates but may have a slow integration with lagging enrollees who are unwilling to participate in the program until it builds a reputation. We should monitor this assessment over time to provide more accurate predictions and inform practice.

PROBLEM STATEMENT:

How can we improve the courses/program so that more people would be more likely to complete a**nd** take more classes?

OBJECTIVES(s):

The objective of this user research is to gather the information that will inform the final product's design. Some of the information that we are interested in understanding in terms of the current user experiences include:

- How many people signed up for the newsletter?
- How many people have visited the website?
    - How many people visited the registration page?
    - How many people click on the sign-in page?

- How many people signed up for courses?
- How many people completed the course?

Some of the questions that I have about future development include:

- How can we improve the design so that users are more likely to complete the courses?
- How can we improve the design so that users get more out of the short courses?
- What other institutional partnerships can be forms to serve potential users better?

METHODOLOGIES:

We will use the following methods:

- Competitive analysis.
- Design review.
- User persona building uses the demographics for students who took courses linked to the number of completed courses.
- Qualitative usability testing.
- Interviews.

PARTICIPANTS:

We will identify two types of students who have taken and are interested in the DDO courses using demographics and data. We will identify the unique motivations, desires, and needs for these groups and identify the design features and usages that would improve the unique functional needs of the various user types, more clearly deliver on their goals, and improve the overall experience.

SCHEDULE AND LOGISTICS:

The user research methods will occur over October. It will take between a month to two months. There is no budget for this research, but additional funds can be identified if needed. It is important to keep student information confidential.

NEXT STEPS

Once the research has been completed and an informed design plan created, We will present the plan to the Drug Discovery Online board for feedback. The design recommendations will be implemented over four months for a Summer 2022 launch when adjusted and approved.