

Board 77: Designing, launching and Assessing a multimedia online learning module for library orientation of first year engineering students

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Abstract

A collaboration between the Dibner library and Faculty Innovations in Teaching and Learning (FITL) produced a multimodal asynchronous module to provide incoming students an online library orientation. A partnership with First-year Students & Academic Initiatives provided the opportunity to deliver the module to all incoming students via the university LMS as a mandatory piece in the new student general orientation. Feedback and assessment data are obtained via the built in LMS survey and tracking functions and the use of Bitly to track link usage. Student feedback indicated that the module was well received. The module is adaptable and expandable. A similar workflow can be used to design modules for other platforms and audiences, such as graduate orientation, online classes orientation, employee onboarding, student compliance and advanced research tutorials.

Introduction

The Bern Dibner Library of Science and Technology, having delivered orientations to undergraduate and graduate students in traditional workshop formats -- auditoriums, classrooms and library tours -- saw an opportunity to create a self guided multimodal module for Undergraduates, and through university partnerships, make it available to a wider audience. We felt that an independent technology driven approach would be ideal for engineering students who will be engaging with and employing such an approach in their coursework and probably in their career. In partnership with the Faculty Innovations in Teaching and Learning Center (FITL), the Dibner Library built an interactive multimedia library online module that was integrated into a portion of the school's new student orientation that was hosted online in the university Learning Management System.

The process unfolded in multiple stages. It began with the conception of the module in the library and evolved into a partnership with the department of Undergraduate and Graduate Academics to design and implement it (FITL and First-year Students & Academic Initiatives, which hosted the module, are under this department). The module represents the transformation of library content and delivery format in an effort to increase the number of new university students that receive orientation. It has the potential to improve student retention of information by eliciting more active engagement and providing the option to revisit and review. Employing the school's Learning Management System, NYU Classes which is powered by Sakai, the team converted what had been an in-person presentation into a multimedia self guided system, incorporating screen capture, voice over, videos, captions, hyperlinks and assessment tools.

The module successfully launched to a user audience of 736 in Fall of 2018 and 91 in Spring 2019. We have examined the generated usage data to better define students' library resource needs and identify areas for improvements in the module. The authors will begin with an introduction to the Dibner Library, the state of our orientations, the FITL partnership, and the

need we were trying to fill. Then we will review the process of creation and implementation. We will conclude with a discussion of the initial feedback and next steps, mentioning possibilities for modification and expansion. We hope to highlight the advantages of the module for the user and library staff, and its effectiveness in assessment.

Background

The NYU Tandon School of Engineering, an urban campus located in Brooklyn, had an undergraduate enrollment of 2,585 and a total enrollment of 5,300 in Fall 2017. It was once an independent university but since 2014 has been a part of New York University. The Bern Dibner Library of Science and Engineering is the second largest library in the NYU system and serves as the primary research resource and study space for the School of Engineering.

In the past there had been two avenues to introducing new students to library resources. One was a library orientation component to the freshman writing classes that required a visit by a librarian to each class. This was discontinued after the merger. There had also been a library presentation to the freshman class during orientation week. This was discontinued when the university adjusted the number of days for new student orientation and incorporated an online component for some content and programs.

There was no longer a platform for a Dibner Librarian to directly address a large part of the School of Engineering student body, leaving many students unprepared for research. They were lacking a basic knowledge of research methodology and the wealth of resources now available to them via NYU Libraries. They were also often unaware of the more mundane matter of library policies and basic services.

The Dibner Library needed a tool or platform that could reach large groups in a short period of time, and at an early time in their study in the university; one that would actively engage them and allow them to take more control of their learning. It would also be helpful if it made it easy for the educators to obtain user feedback and data on patterns of engagement.

The inspiration for this module was a self guided, self paced, and engaging undergraduate product, which made use of screen capture, video, audio, and links for asynchronous learning. It was created as a result of collaborative effort between two support offices at the NYU-Tandon School of Engineering - the Academic Advisement Center (AAC) and Faculty Innovations Teaching and Learning Center (FITL).

(FITL) is a faculty-centered enterprise dedicated to the advancement of educational practice. The mission of FITL is to partner with faculty and staff to promote innovative teaching strategies and technologies for learning at the NYU Tandon School of Engineering. This includes collaborating with faculty and staff on technology based projects that will ultimately serve to

promote student success. They were the perfect partner for the library to design the orientation module.

Literature Review

Many articles have affirmed the benefits, even necessity, of online instruction. Early articles noted that though it is time consuming and labor intensive to create an online instruction module, in the end it enables librarians to better leverage staff time in an era when class sizes are increasing without a corresponding increase in librarians [1], [2]. A more recent study reaffirmed this, but also noted that users expressed preference for the self-paced nature of the module [3]. Gonzales summed up the advantages in online learning tutorials: they provide consistency in interface; multiple learning styles (including active learning, text, visual, audio); self paced learning including the ability to review the material; and are preferred by students [4]. Mune wrote that “as long as there is buy-in from library and campus stakeholders, the reusable and scalable nature of the modules make the investment well worth the time and effort” [5].

Articles on using online instruction with first year students have described a variety of circumstances, experiences, and findings: students learned as well with the module as with in person instruction, but any instruction was found, in before and after testing, to be better than none [2]. In a 2014 article, Gonzalez compared findings of online library instruction effectiveness from ten years before the paper was written up to the time of writing and found that either there was no difference in effectiveness, or that a module was more effective than an in person presentation [4]. There is also a case to be made for basic orientations, “library services and resources, rather than traditional database instruction,” because students who become familiar with the library and its staff are more likely to seek assistance from the library when they need it [6].

A number of articles discussed the advantages of placing a module in a Course / Learning Management System (LMS). This could be delivered as an asynchronous module or as a live instruction to online classes, but Mune noted the challenges of live embedded instruction, including the technical dimension of learning the system, and listed the advantages of creating a suite of modules as an alternative to this [5]. Creating a module for an LMS can free librarian time, but has drawbacks (such as login access, cumbersome procedures for making changes,) as well as benefits [7]. Inclusion in an LMS did not mean everything would automatically flow smoothly, and It was often necessary to iron out wrinkles after launch [8]. An LMS module was likely to be successful when built in collaboration because of the range of skills required [9]. The inclusion of short films and videos are relatively easy, and the instructors have the option to easily add a module to their classes [10]; run a pilot [11], integrate an Info Lit quiz (enhancing the ability of librarians to tailor their teaching to student needs) [12], and track engagement by time spent on the module [13].

Many articles have appeared on the practical aspects of design and content of online library instructional material. Blummer wrote a literature review on best practices for creating an online tutorial [14]. Other studies include best practices for streaming desktop capture [15]; the creation of a multimedia tutorial [16]; creating an adaptable module for an LMS [5]; updating and scaling content [17]; incorporating informational media into a web based information literacy tutorial [18]; incorporating student feedback to enhance design and updates [19]; designing an interactive online module based on pedagogical best practices [20]; and delivering information using available technologies [21].

Several authors, including Henrich and Lowe have mentioned the advantages in obtaining assessment data that an online module provides [11]. Case studies on evaluating and assessing the effectiveness of online modules and tutorials include a discussion of usability testing [22]; a health sciences library in which the information was expected to be freely available to similar institutions [23]; and a thorough analysis of data over three semesters [24].

The literature has demonstrated that online instruction is at least as effective as in person instruction. It is effective as a tool for first year orientation. A module has several advantages for designer and user, including the asynchronous nature of instruction and learning, and the ability to increase the audience. Inclusion in an LMS provides advantages in targeting an audience and obtaining assessment data. It is best built as a collaborative effort because of the different skills involved in its creation. It is beneficial to include multimedia content, and to reiterate important points in multiple formats to incorporate different modes of learning. Sections and media should be kept short to prevent user fatigue. There may be some challenges in creating and maintaining the module, but it is worth the time and effort.

Planning and Creation

Initiation

The Instructional Librarian initiated a meeting with FITL to discuss the possibility of creating a module and what each member could bring to the table in a collaborative effort to design, and build the module. We agreed that the project was feasible and desirable and we decided to begin working on the module. Work on the project then commenced with a meeting of the Instructional Librarian and FITL's Instructional Designer. By the end of the project, they had assembled a team of specialists that included members from FITL (Director of FITL, Instructional Designer, Media Producer) and the Library (Instructional Librarian, Assistant Director, Engineering Reference Associate) and partnered with the Assistant Dean for First-Year Students & Academic Initiatives to secure a hosting platform and outreach to the entire new student body.

Planning

Preliminary discussions between the Instructional Librarian and Instructional Designer resulted in an early decision to condense the material by limiting content to the key areas an incoming freshman would most likely 1) be interested in, and 2) find useful. The focus of this preliminary module would be a quick introduction to guides and services. It would be composed of two sections: Welcome to Dibner Library (a filmed welcoming video featuring the Instructional Librarian) and Access and Services (library space, hours, where students could go and what they could do within the library system). An additional section was later added because the team came to believe that it would be nice to end on a note of fun and professional development: Learning and Events which highlights the weekly engagement activities and the semester schedule of library workshops. Workshops enabled the library to publicize its pre-planned workshop schedule and to highlight some strategic partners that not only provided some of the workshops, but important services that were available year round. These include Data Services and High Performance Computing. Atrium Activities spotlighted the many fun engagement activities that occurred throughout the semester at a pop up atrium desk and, like the module, are designed to appeal to engineering students and would also provide the students with treats, prizes, and fun and games. The team hoped that this additional content would serve to spark the students' interest and create a sense of anticipation and familiarity with the desk (and, it was hoped, foster more engagement).

The sections of the module were arranged according to the outline below.

- **Welcome Video**

- **Access and Services** (where you can go and what you can do)
 - a. Accessing Bern Dibner Library (Bobst & Dibner) web page, hours, reserve rooms
 - a. Dibner Library Space (rooms, equipment, layout, snacks)
 - b. Library Services (printing, course reserve, laptop loan, service desk)

- **Learning and Events**
 - a. Workshops
 - b. Atrium Activities

The first section was a brief (0:00:57 minutes) welcoming video. The Access and Services and Learning and Events pages contained the topical videos on the left and a sidebar on the right with links and highlighted information in bullet form. See *Figures 1 & 2* for screenshots.

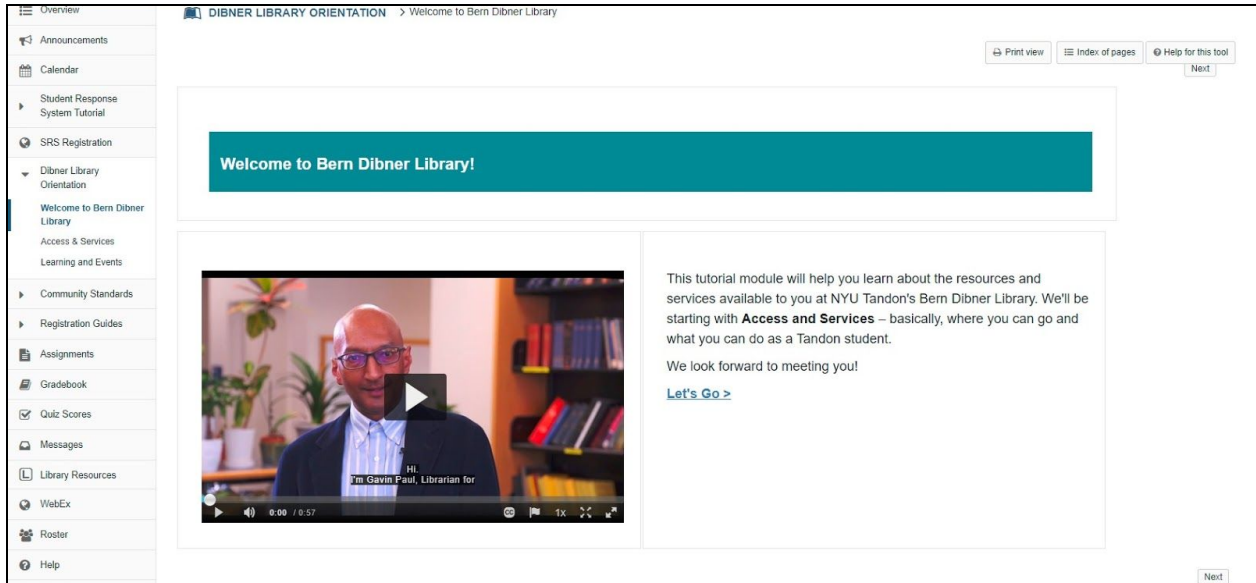


Figure 1: Welcome to Bern Dibner Library Page

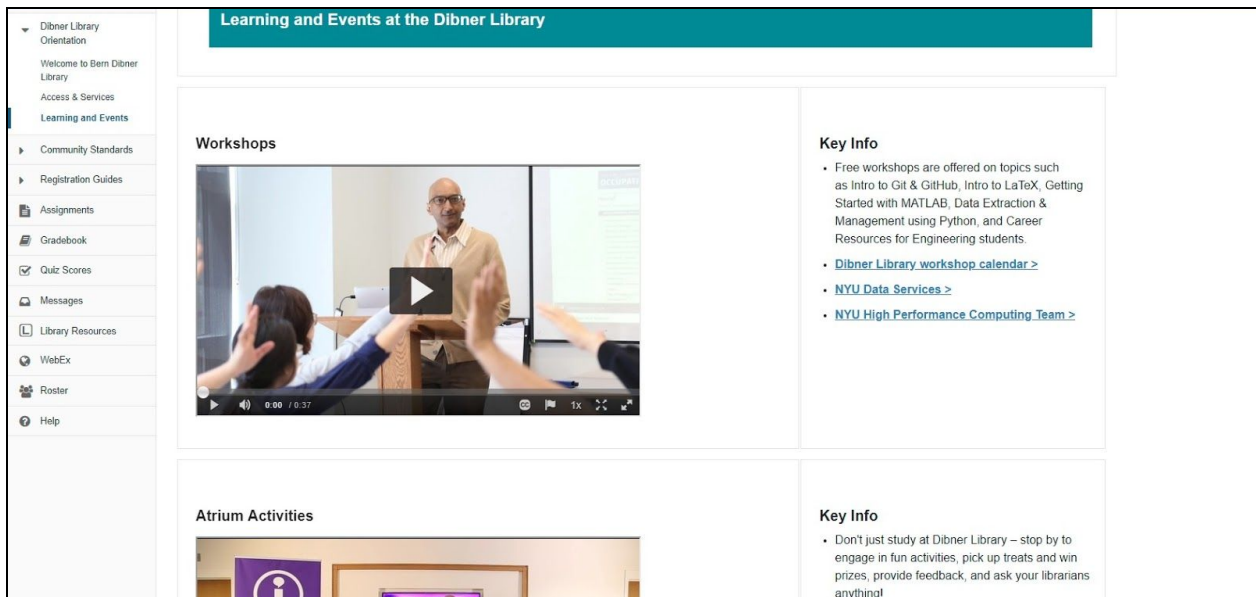


Figure 2: Learning and Events at the Dibner Library Page

A discussion of the hosting platform between the Instructional Designer and Instructional Librarian was necessary - whether it should be open or require a login, and what were the advantages of the different online hosting services available to an NYU user. In the end we chose the platform based on the partnership with First-year Students & Academic Initiatives to make the module part of the first year experience. This would enable the library to eventually embed the tutorial in the First-year Students & Academic Initiatives section of the NYU Learning Management System.

Execution

Once a host was secured, work commenced on how best to translate the material to an online document. The PowerPoint presentation that the Instructional Librarian had created and used for new graduate student orientation was closely examined by the Instructional Designer. The Instructional Librarian had also recorded his delivery of the presentation, using the PowerPoint slides and his unscripted natural approach, so that the Instructional Designer could see how he normally conveyed the content and gain a better perspective on how to port it onto the Learning Management System. The team made an outline of the information they wished to provide based on the PowerPoint, discussed what sources should be used to highlight the information, and what modes of presentation - such as screen capture, video, and still images - should be employed in each section.

The first part of the module was a video that provided a smooth flowing, welcoming narrative. We personalized the product by placing the Instructional Librarian, someone that viewers might encounter on campus, in this welcoming video. In other sections, screen capture and voice overs were used for website navigation, and still photographs were useful when there was a need to highlight or zoom in on something. There were some cases when we had only still photos but used the Ken Burns documentary techniques of increasing and decreasing size, fading in and out, and moving still images across the screen to give the illusion of full motion video.

Much effort went into producing the audio. The Instructional Librarian used Camtasia to make a screen capture as he navigated the targeted library web content. He found it useful to deliver the narration as he was browsing as a pacing mechanism for moving through the web pages at a comfortable speed. But this voice recording was not smooth enough and of sufficient quality to be used in the final product. Another recording of the narration was made by reciting a script in the FITL recording studio. This higher quality studio recording was edited using the digital audio workstation with GarageBand software and it was this studio recording that was embedded into the final video. The Instructional Designer engaged in much audio editing to match the audio to video. This included cutting parts, raising and lowering volume, spacing voice to match navigation, and even rearranging sections of the audio to match parts of the video capture that were edited or resequenced. All audio was automatically transcribed by the University video streaming application and the Instructional Designer manually edited to correct errors for improved accessibility.

Additional visuals were created to match audio by the Instructional Designer with the help of the Media Producer. This included screenshots, voiceovers, photographs, clip art, and filmed videos. Popup text, and images were used for emphasis and reinforcement. We also added sidebars with key points. The division of content into sections with links and sidebars with important points meant that the user could be actively engaged by browsing, moving between sections, following links, and returning to sections. Video clips were very short, usually a little

over a minute so that they could quickly be viewed and replayed. This variety and breakdown together with audio captioning served to make the module suitable for different learning styles.

A recurring pattern throughout the creation process was that the team already had, or created, more material than was actually used. The team found in practice that the best way to proceed was to write or record what they thought they needed and to work on abbreviating the material. This resulted in profuse and fastidious editing of the script, removing extra words and sentences, aiming for precision. Sidebars with bulleted fast facts and links helped to accentuate points. The sidebars had the additional advantage of being easily updated, so they were very useful for content that was prone to change. Unnecessary footage was cut. It was an objective to keep video (including screen capture) as short as possible to hold the viewer's attention. Much of the final product was the result of meticulous editing. The welcoming video is an example of this process. It features the Instructional Librarian speaking to the camera. It was very brief, but still resulted in some back and forth discussion about whether there should be music or not, what type, and the volume (the point under consideration was how best to enhance the narrative and not distract the viewer). We decided on barely audible, calm music after experimenting with different styles and discussing the effect.

Different modes of learning are supported by the module. There is audio, video with captions and bulleted points; one has the opportunity to step back and review, and the chance to provide feedback. Very few still photos were used, but the Instructional Designer employed the Ken Burns effect of increasing and decreasing size, panning, and different modes of transition in an effort to keep the film lively and engaging and to prevent the viewer losing interest from gazing at a still screen. Making the module as accessible as possible and visually representative of a diverse community was a goal. Moreover, feedback related to accessibility will be given priority.

Implementation

The finished multimedia content was mounted on the LMS, NYU Classes. The module was built in a private FITL sandbox, but to reach an audience it needed to be hosted and made public in an account where it could be easily accessed. The library was fortunate in forging a collaboration with the Assistant Dean for First-Year Students & Academic Initiatives. She and the Director of FITL had previously worked on a highly successful module to introduce new students to the registration platform. It was part of every new student's basic orientation program. The Instructional Librarian, Director of FITL and Instructional Designer met with the Assistant Dean early and described the format and objectives of the module which was then a work in a very early stage of development. All parties agreed that the module would be a useful part of the freshman orientation program.

The Instructional Designer and Instructional Librarian had an initial conversation just before classes began in Fall 2017, worked on the module throughout the semester, and had a version ready for a pilot run to a small group of students in the Spring 2018 orientation. The module ran

without issues in the Pilot. The team examined the preliminary usage data and feedback that the pilot provided. There were no technical issues and student feedback was positive and helpful in making some important improvements to the videos. The Learning and Events section was added during the Summer of 2018. The updated version of the module was launched to the entire incoming freshman class of 736 students during the summer 2018.

On July 17, 2018, the Assistant Dean for First-Year Students & Academic Initiatives sent out an email alerting the incoming students that the library module was a mandatory tutorial for all incoming students and that they should make every effort to complete it by August 13, 2018.

Monitor & Control

Usage of the University LMS has some major advantages for the project. One is the ability to place the module in a location where the entire freshman student population would have access to it. The other is that the LMS has a direct integration with the University video platform and the ability to monitor usage, solicit targeted feedback, and track a wealth of usage data. Analysis of this data enabled the team to measure the degrees of success of various sections and to target areas for improvement.

Video viewership tracking was important since we used videos as a key media element in the module. All videos are stored in the University video platform, NYU Stream. This platform has numerous metrics for tracking the viewer's activity on a video:

- Visits (accessing the video landing page),
- Plays (actually viewing the video),
- Plays to visits ratio (percentage of plays per visits),
- Average drop-off rates (average percentage of video viewed by students),
- Average view time (average time of video viewed by students)

Depending on settings, one can track by aggregate or individual viewers. With some slight manipulation of the given metrics, we are able to generate other metrics that also add to the overall analysis (e.g., Time Remaining which indicates the video time segment not watched by students).

Table 1 and *Table 2* below show the video metrics gathered on students the Fall 2018 and Spring 2019:

Fall 2018 Video Viewership Data: 736 Students							
Video	Plays	Visits	Plays to Visits Ratio	Avg. Drop-Off	Avg. View Time	Time Remaining	Video Length
Welcome	240	700	34%	87%	0:00:49	0:00:08	0:00:57
Access	351	1748	20%	94%	0:01:17	0:00:11	0:01:28
Space	298	1725	17%	98%	0:01:10	0:00:02	0:01:12

Services	305	1723	18%	93%	0:01:30	0:00:07	0:01:37
Workshops	293	1658	18%	97%	0:00:35	0:00:02	0:00:37
Atrium Activities	278	1507	17%	88%	0:00:59	0:00:08	0:01:07

Table 1: Fall 2018 Video Viewership Data

Spring 2019 Video Viewership Data: 92 Students							
Video	Plays	Visits	Plays to Visits Ratio	Avg. Drop-Off	Avg. View Time	Time Remaining	Video Length
Welcome	32	112	29%	89%	0:00:50	0:00:07	0:00:57
Access	57	268	21%	85%	0:01:14	0:00:14	0:01:28
Space	52	267	19%	91%	0:01:05	0:00:07	0:01:12
Services	49	264	19%	84%	0:01:21	0:00:16	0:01:37
Workshops	44	226	19%	92%	0:00:33	0:00:04	0:00:37
Atrium Activities	39	225	17%	86%	0:00:57	0:00:10	0:01:07

Table 2: Spring 2019 Video Viewership Data

The viewership data suggests that we met our video goals of educating incoming students about Library Services before they begin their academic career at the University and we gained insight into what they felt were their general Library needs. Viewership numbers were great for both initial and follow-up semester launch. In the Spring 2019 run, there was a slight decrease in the time students watched the videos as indicated in the time remaining for 5 of the 6 videos.

Another feature used for quick analysis of user feedback was the embedded surveys. At a glance one can see in Tables 3 & 4 below, how many chose to answer the multiple choice questions (that sought to rank sections by perceived usefulness or by where more information was desirable), and how many chose which option.

Simple multiple choice questions were used: “Which information video did you find most useful?” and “Which topic area do you need more information on and when” that would enable the team to make revisions, updates, and expansions based on user preference. We used the same three question listed below for Access and Services and Learning and Events:

1. Which information video did you find most useful?
2. Which topic area do you need more information on and when?
3. Please enter any additional comments you may have:

Fall 2018 Poll Question Data: 736 Students						
	Access and Services			Learning and Events		
	Question 1	Question 2	Question 3	Question 1	Question 2	Question 3
Submissions (#)	389	382	184	369	374	155

Submissions (%)	53%	52%	25%	50%	51%	21%
No Submissions (#)	347	354	552	367	362	581
No Submissions (%)	47%	48%	75%	50%	49%	79%

Table 3: Fall 2018 Poll Question Data

Spring 2019 Poll Question Data: 92 Students						
	Access and Services			Learning and Events		
	Question 1	Question 2	Question 3	Question 1	Question 2	Question 3
Submissions (#)	68	68	28	70	64	26
Submissions (%)	74%	74%	30%	76%	70%	28%
No Submissions (#)	24	24	64	22	28	66
No Submissions (%)	26%	26%	70%	24%	30%	72%

Table 4: Spring 2019 Poll Question Data

Interesting to note is that student engagements through the use of the Poll questions in the Spring 2019 semester exceed the Fall 2018 semester by as much as 26% for Multiple Select Answer Questions. For Comment Box Open Ended Questions, 70-79% of the student from both semesters did not submit any feedback for consideration. This is something for us to consider for future polling question types.

In addition to the tools provided by NYU Classes and Stream, the team also employed a strategy that the Dibner Library had previously used to measure the effectiveness of its marketing efforts: the link management platform Bitly. A Bitly link was created for all the linked urls in the module. This enabled the team to measure the clickthrough rates of all the hyperlinks during a given week, thus informing us which were the most popular links (NYU Library, Bern Dibner Library, and Bern Dibner Library Space) and in which week the module was most heavily accessed (the week of August 5th when it was first accessible).

Taken together, and in parts, this information enables us to make a decision - based both on direct feedback and patterns of use - when best to deliver the module (in whole, or in sections) if we chose to reconfigure the delivery dates or content.

What we learned

The biggest difference between the original conception and the final product (or the product as it exists at the time of writing) was how much content was left out, both from the original PowerPoint and from the later recorded content. Imagining what it would be like to view a video or read a text in the context for which we were designing, the Instructional Designer wisely

decided that it was best to make the videos as brief as possible and to reiterate important points on sidebars with appropriate links.

The video development objective from the beginning of this project was to create products that were informative, visually stimulating and most importantly, short in length to increase viewership. One can see from the video metrics below (Chart 1 & 2) that the usage data confirmed the effectiveness of these videos with the high average drop-off rate of over 85% on all videos for both semesters in the module.

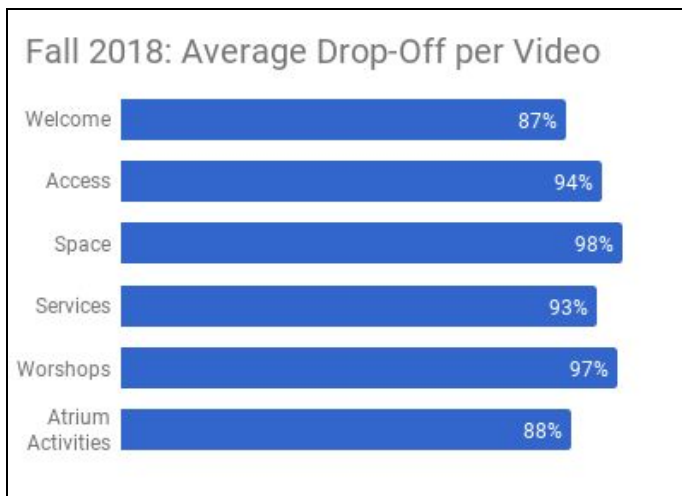


Chart 1: Fall 2018 - Average Drop-Off per Video

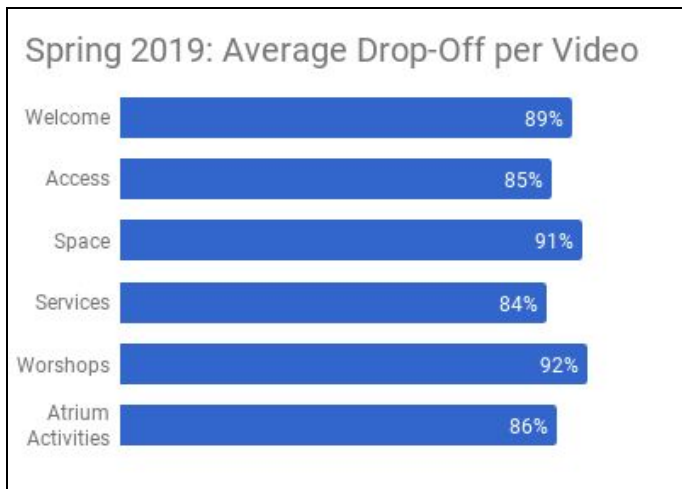


Chart 2: Spring 2019 - Average Drop-Off per Video

The videos on Space and Workshops had an average drop-off rate of 98% and 97% for Fall and 91% and 92% for Spring, respectively which indicates the two topics of high interest to students. Feedback was extremely positive with comments including, "Very well made videos that sum up

most of the much needed information”; “i look forward to the workshops”; “I can’t wait to check the library out”; “The Library Services video made me feel that I have support as a freshman.”

In the organization of the module as a whole, we thought it best to focus on the sections that would be of most immediate utility and most likely remain in memory through imminent application or encounter. We would save research tips for another more advanced module that could be used later in the students’ academic career.

We worked with a view to the future, striving to ease the inevitable updating. With this in mind we used links to pages with extensive information instead of directly adding the information as text in the module. The spoken narrative was made without using too many specific details and references so that frequent re-recording would not be necessary.

Partnerships were very important to the successful completion and launch of the module. The library conceived of the project but could not fulfill it, at least not to such a degree, without the assistance of and collaboration with two offices from the Department of Undergraduate and Graduate Academics: Faculty Innovations in Teaching and Learning (FITL) and First-year Students & Academic Initiatives. FITL was invaluable in assisting the library in transforming notes, slides and other material into the digital multimedia self guided product. They played a heavy role in editing and were responsible for filming, and mounting to the Learning Management System. Without the enthusiastic sponsorship of First-year Students & Academic Initiatives, we would not have had such a suitable platform or found such a large and engaged audience.

We were fortunate to have the initial stages of the module in near completion at just the right time so that it could be tested in the Spring semester with a pilot run involving a smaller number of incoming students than the Fall semester. We were not specifically planning for this but it was a fortuitous development. We would recommend that others planning a similar product keep possible trial dates in mind in addition to ultimate launch targets.

We learned useful information from the user feedback we obtained via brief multiple choice questions that we built into the module. 736 students viewed the module in the fall of 2018. We asked only two multiple choice questions, the first being “Which information did you find most useful?” We were gratified to see that none of the respondents chose the option “None of the videos was useful to me.” By far the largest number, at 68.9%, chose “All three of the videos were equally useful.” Of those who expressed a preference, the largest number, 13.1%, chose the Library Services Video (Accessing Bern Dibner Library was second at 9.5%, and Dibner Library space was last at 8.7% - this may be because there is not a large space to explore and users felt that it was easy to discover on their own).

The second question was “Which Topic area do you need more information on and when?” In this case a small number, 6.8%, chose “This information isn’t useful to me.” (It should be noted that this is referring to possible future information, not to the information they received in the

module). The largest number chose “All three topic areas - During the semester” (the third largest was for the related “All three topic areas - Before starting my first semester.” The second largest, 17.8%, chose “Library Services - During the Semester” (echoing the preference for Library Services in the first question).

Future Plans/ Next Steps

We wish to tap into the needs of the entire student body. Since the current module is for undergraduate students, an immediate concern is to assess what the general graduate student needs and create a similar learning space for them. The preliminary module is being used for orientation. However, the format or design of the module allows for the transfer of all types of content for student learning. The plan is to develop modules in the future for advanced learning with even more defined assessment tools for greater analytical understanding.

Opportunities exist to obtain more comprehensive assessment data using the Learning Management System. We can tag students by cohorts, creating semester groupings of the students, and we can examine data by majors. Employing Gradebook, a feature of the LMS, would facilitate retrieval of assessment data. The gradebook would allow us to keep track of task completion in the module. If we create quizzes and scoring cards, we could see user activity and grade it. We plan to take advantage of all these features in updates to the module.

The current product and its audience is capable of exponential expansion. Connections with FITL and other organizations at Tandon may be leveraged to provide similar experiences to 1) graduate students, 2) new faculty, and 3) online learning students. The current orientation module is mandatory for incoming freshman. We can imagine a future where a similar condition exists for the three potential audiences mentioned above. This can be brought about by prominent placement of the module in NYU Classes training platforms, incorporation into new faculty orientation, being built into the graduate orientation program, or made part of Tandon Online orientation. This will depend on the technological requirements and best possibilities for high impact placement. The optimal placement would be in an area where it is either mandatory or a highly recommended part of a program, such as the case with the undergraduate module in new student orientation at Tandon.

This content can be adapted and expanded in different ways. The platform can be changed to accommodate different forms of instructions. It can be put on a web hosting platform instead of NYU classes, can reside on localized computers, or distributed on USB. Each platform will require modification in content which will be accomplished in collaboration with the media producers and learning specialists at FITL.

In short, our plan is to build much more from this Launchpad, modifying the original based on feedback and assessment data; create additional modules for different audiences; expand the content for more advanced research; and transfer the content into additional platforms and distribution channels outside of the current NYU Classes.

- [1] L. Holman, "A comparison of computer-assisted instruction and classroom bibliographic instruction," *Reference & User Services Quarterly*, vol. 40, (1), pp. 53-60, 2000.
- [2] C. A. Germain, T. E. Jacobson and S. A. Kaczor, "A comparison of the effectiveness of presentation formats for instruction: teaching first-year students," *College and Research Libraries*, vol. 61, (1), pp. 65-72, 2000.
- [3] Q. Zhang, M. Goodman and S. Xie, "Integrating Library Instruction into the Course Management System for a First-Year Engineering Class: An Evidence-Based Study Measuring the Effectiveness of Blended Learning on Students' Information Literacy Levels," *College and Research Libraries (Online)*, vol. 76, (7), pp. 934, 2015.
- [4] B. M. Gonzales, "Online Tutorials and Effective Information Literacy Instruction for Distance Learners," *Journal of Library & Information Services in Distance Learning*, vol. 8, (1-2), pp. 45-55, January, 2014.
- [5] C. Mune *et al*, "Developing Adaptable Online Information Literacy Modules for a Learning Management System," *Journal of Library & Information Services in Distance Learning*, vol. 9, (1-2), pp. 101-118, January, 2015.
- [6] C. Goldman *et al*, "Creating an Engaging Library Orientation: First year experience courses at UC San Diego," *Communications in Information Literacy*, vol. 10, (1), pp. 81-98, 2016.
- [7] E. W. Kraemer, "Developing the online learning environment: the pros and cons of using WebCT for library instruction," *Information Technology and Libraries*, vol. 22, (2), pp. 87-92, 2003.
- [8] S. Patalong, "Using the virtual learning environment WebCT to enhance information skills teaching at Coventry University," *Library Review*, vol. 52, (3/4), pp. 103-110, 2003.
- [9] L. F. Li, S. Leung and G. Tam, "Promoting information literacy skills through web-based instruction," *Library Management*, vol. 28, (8/9), pp. 531-539, 2007.
- [10] L. G. Adebonojo, "A way to reach all of your students: The course management system," *Journal of Library and Information Services in Distance Learning*, vol. 5, (3), pp. 105-113, 2011.
- [11] K. J. Henrich and R. I. Attebury, "Using Blackboard to Assess Course-Specific Asynchronous Library Instruction," *Internet Reference Services Quarterly*, vol. 17, (3-4), pp. 167-179, July, 2012.
- [12] M. S. Lowe *et al*, "Integrating an Information Literacy Quiz into the Learning Management System," *Communications in Information Literacy*, vol. 8, (1), pp. 115-130, 2014.
- [13] M. Thill, J. W. Rosenzweig and L. C. Wallis, "The Relationship Between Student Demographics and Student Engagement with Online Library Instruction Modules," *Evidence Based Library and Information Practice*, vol. 11, (3), pp. 4, 2016.
- [14] B. A. Blummer and O. Kritskaya, "Best Practices for Creating an Online Tutorial: A Literature Review," *Journal of Web Librarianship*, vol. 3, (3), pp. 199-216, September, 2009.
- [15] E. Ehrenberg and N. Tempelman-Kluit, "Library instruction and online tutorials: developing best practices for streaming desktop video capture," *Feliciter*, vol. 49, (2), pp. 89-90, 2003.
- [16] A. Gustavson, A. Whitehurst and D. Hisle, "Laying the information literacy foundation: a multiple-media solution," *Library Hi Tech*, vol. 29, (4), pp. 725-740, 2011.
- [17] S. LeMire, "Scaling Instruction to Needs: Updating an Online Information Literacy Course," *Reference & User Services Quarterly*, vol. 56, (1), pp. 17-22, 2016.
- [18] L. Zhang, "Effectively incorporating instructional media into web-based information literacy," *The Electronic Library*, vol. 24, (3), pp. 294-306, 2006.
- [19] M. L. Jacklin and K. Robinson, "Evolution of Various Library Instruction Strategies: Using

Student Feedback to Create and Enhance Online Active Learning Assignments," *Partnership : The Canadian Journal of Library and Information Practice and Research*, vol. 8, (1), pp. 1-21, 2013.

[20] K. Stiwinter, "Using an Interactive Online Tutorial to Expand Library Instruction," *Internet Reference Services Quarterly*, vol. 18, (1), pp. 15-41, January, 2013.

[21] I. Koneru, "ADDIE: Designing Web-enabled Information Literacy Instructional Modules," *DESIDOC Journal of Library & Information Technology*, vol. 30, (3), pp. 23, 2010.

[22] S. Bury and J. Oud, "Usability testing of an online information literacy tutorial," *Reference Services Review*, vol. 33, (1), pp. 54-65, 2005.

[23] C. B. W. MLS, N. H. T. MLS and Epstein Barbara A, MSLS AHIP, "Evaluation of a self-paced learning module to teach responsible literature searching for research," *Journal of the Medical Library Association*, vol. 98, (1), pp. 82-85, 2010.

[24] N. W. Noe and B. A. Bishop, "Assessing Auburn University Library's Tiger Information Literacy Tutorial (TILT)," *Reference Services Review*, vol. 33, (2), pp. 173-187, 2005.