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DLO Casting Call: At the Crossroads of Instructional Design, Technology, and Collaboration

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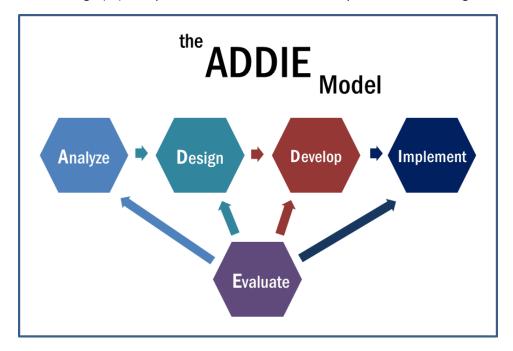
Sacred Heart University

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Learning Object ID

Foundations in Instructional Design (ID)

A small budget and small staff size mean you have to be systematic and creative. We followed some basic Instructional Design (ID) best practices that maximized our impact without maxing out our efforts.

Instructional Design

Char Booth, in their *Reflective Teaching, Effective Learning*, describes instructional design in this way: "instructional design consists of principles that explain how learning occurs in different situations and models that explain how to put theory into practice" (Booth 2011, 86).

Influenced by cognitive psychology, pedagogical theories, and the science of learning, ID helps us understand how people learn, while ID models help us create the conditions necessary to ensure that people do learn.

There are different ID models that help educators structure teaching and learning experiences. After a period of reflection, we realized that we loosely followed the ADDIE model. This realization may speak to the fact that instructional design methods are intuitive when it comes to creating effective teaching and learning opportunities. In general, it would help to be more intentional in deciding which ID model a project or idea should follow. While the ADDIE model applies to a variety of instructional formats (face-to-face, online, and blended), other models might be more ideal in specific instances. For example, Wiggins and McTighe's method of Backwards Design is ideal for developing entire courses or specific assignments but is less applicable in designing digital learning objects.

ADDIE served the project well when building the content of the digital learning objects, as well as in building the portal.

Perform a needs assessment.

Ask:

- Who are the learners?
- What do they already know?
- What do you want them to learn?

This stage is an opportunity to get to know the project before diving into it. Sometimes this means a formal needs assessment with surveys, focus groups, and interviews, and other times informal methods are enough to help you analyze the situation.

In our case, it was enough to have some conversations about what our community needed. Ula joined the staff in January 2017 and began having conversations with colleagues that acted as a needs assessment for a large scale project. There were a few things we realized as we analyzed the parameters of the project together:

- As a rapidly growing institution with a small library staff, we needed to move beyond face-to-face interactions. Digital learning objects, particularly videos and tutorials, would be a way to reach more students.
- The library had several new services that needed marketing as well as instruction (online booking for study rooms, chat service). Videos and tutorials would allow for both!
- We already had some of the necessary technologies and tools to get the project started.

Design and Accessibility

Ask:

- What is the best method of instruction for the intended learning outcomes?
- How is this going to look?
- Who is going to use this? Consideration for accessibility from the start.

For specific database instruction, Ula knew it was not worth creating videos because database vendors have created that type of content, as well as other libraries. There is no sense in reinventing the wheel, particularly when staff time is limited. Because of these considerations, Ula saw the LibWizard standalone tutorials as the ideal medium. We branded these as Guided Tours as students would be able to learn how to use a database as they interacted with it. The learning outcomes where simple, skills-based and capped at three. Each page of a Guided Tour tutorial has instructions to guide students through a search, Hints in the form of screenshots so they would know what to look for, and at least one required question to check for understanding.

When designing video content, we wanted them to be less than 2 minutes long, preferably around a minute. The format would be screen casting with a voiceover, so the sound quality was a major concern. Videos designed for faculty could be longer.

Accessibility should be considered from the start. Some basic requirements include: all videos having captions and/or subtitles, and transcripts being immediately available to those who need them.

Learning Object Tech

Technology and Implementation

After careful consideration of technology, elements of instructional design continued to help us create content within our constraints. And then we were done! But, with different platforms, it was hard to point students, faculty, or other library staff to where the tutorials lived.
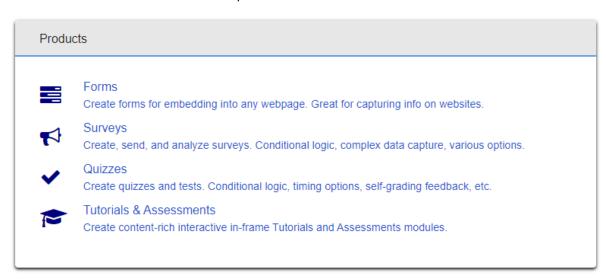
Technology

Ask:

- What is the budget?
- What is already available to use for the project?
- What is necessary to acquire?

Even when the budget is small or non-existent, it is important to determine what you can afford to spend first in order to aid decision making. Our budget was very limited (less than $500), and while there was some wiggle room, we needed to make strategic decisions when spending those funds.

Throughout the design and development process, we became aware of the technology already available to us. The SHU library subscribes to the LibApps suite of products from Springshare, including the LibGuides CMS and the entire LibWizard platform.

Products

Forms
Create forms for embedding into any webpage. Great for capturing info on websites.

Surveys
Create, send, and analyze surveys. Conditional logic, complex data capture, various options.

Quizzes
Create quizzes and tests. Conditional logic, timing options, self-grading feedback, etc.

Tutorials & Assessments
Create content-rich interactive in-frame Tutorials and Assessments modules.

The LibWizard platform allows us to create surveys, forms, quizzes, standalone and embedded tutorials. Besides some internal statistics forms, the LibWizard platform was not being used to its fullest extent, so it made sense to build tutorials there considering the library was already paying for it.

To develop the videos, we had to find editing software that was free or low-cost to be able to edit and export the videos. There were many free and freemium options, and after some group discussions, the group decided on Active Presenter.

Active Presenter is a free tool with a paid upgrade option. We invested in the upgrade for two users, costing us $150. The free option allows for complete access to all the editing features while the paid version removes the watermark from tutorials. At the beginning of the project, we wanted to be able to build tutorials that could be plugged directly into Blackboard. Active Presenter allowed for that through a SCORM builder but included a watermark in the free version. While we ended up making a couple of tutorials using Active Presenter, the effort to create them was too much, considering their potential use. Moving forward, we will not purchase access to the next upgrade but will continue to use the free version of Active Presenter to create videos.

The School of Communications, Media & the Arts at SHU has a radio and podcasting studio that is open to staff use. During the summer, we were able to use the space for large chunks of the day. During the academic year, our use was welcome, but we had to coordinate with the Radio Club and their programming. At first, we were able to use microphones provided to us by the Studio Manager, but after a few recordings where he was not around to borrow from him, we decided it was worth purchasing our own microphone and pop filter set. This cost us another $150.

Ula was willing to use her personal laptop for voice over recording sessions, but in the future, we will ask to use the equipment already available in the podcasting room.

We started out with a Vimeo account, drawn to the fact that the platform has fewer advertisements. We were frustrated by the limited statistics/analytics of the free version of the platform. In the summer of 2018, we created a YouTube channel. Although there are more ads on that platform, it offers more information about views and other stats for free.

We built it! The big project was done.

Wait...no one is using this.

Because the tutorials were available in different formats, across a variety of platforms, librarians could not point students and faculty to one place. And although many librarians participated in the project, even they forgot to use the tutorials in reference, particularly in chat interactions, and in instructional settings.

When librarians pointed to them in some of their LibGuides, there was more usage. But faculty still did not know about the content we had created. We needed to consider how to move forward so that our efforts were not wasted on content that would never get used.
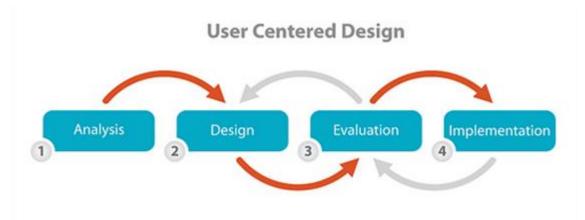
Portal Design

User Centered Design

Following our initial round of creating Digital Learning Objects and tutorials, we quickly realized that we had a discoverability and access problem, which would limit the use of the materials. We needed a way to bring all the DLOs into one browsable location to facilitate use. In short, we needed a Tutorial portal built with our users in mind.

Design Process

With the realization that we needed to create a portal to the DLOs that we had worked so hard to design, we quickly came together to create a portal design to facilitate user access to the materials. Building off our recent experience of designing the DLOs, we developed a process that loosely resembled a User Centered Design model. According to the Interaction Design Foundation, User Centered Design (UCD) "is an iterative design process in which designers focus on the users and their needs in each phase of the design process." (https://www.interaction-design.org/literature/topics/user-centered-design)

User Centered Design

Analysis 1 — Design 2 — Evaluation 3 — Implementation 4

Well before we were ready to initiate an implementation of our Tutorial portal, we spent a considerable amount of time analyzing the needs regarding the portal, creating design ideas, and evaluating how those design elements might work all the while keeping our users in mind.

Analysis

Our initial analysis focused on three main questions:

- Who are the potential users?
- What are the potential use cases?
- Are there ways that the design can facilitate use?

Users

Identifying the potential users was straightforward. Clearly the main users were going to be the students and faculty at SHU. We also felt SHU librarians were potential users, and we were aware that users at other institutions may find some of the DLOs helpful.

Use Cases

We identified multiple potential use cases, but ultimately focused on three main ones. First, we wanted to keep in mind the self-helpers that would navigate to our website and look for information on improving the research and library skills. Another use case with great potential was faculty pushing the content to their courses through their Blackboard (LMS) course shells. And lastly, we saw the tutorials as a great way to enhance librarian reference interactions with students.

Facilitating Use

Knowing the users and use cases, we wanted to think about and look for ways that we could facilitate use with the design of the portal. First and foremost was the idea that we needed to bring everything together in a meaningful and useful way. Also, we were looking for ways to streamline access to and use of the material through simple linking, whether direct or through Blackboard.

Design

After our initial analysis, we were ready to start thinking about the design of the portal. To ensure that the user needs were met, we simply let the answers to our analysis questions guide the design our Tutorial portal. Those answers led to a few key design elements that we made sure to incorporate:

- With so many potential users, we needed to build the portal for different learning preferences. We wanted to make sure we used a mix of textual and visual elements.

- We needed the portal to be browsable. We developed many tutorials covering many learning needs, so we needed a portal that quickly lead users to the information they need without having to slog through long lists.
- The design and look of the portal should be simple, clean, and easy to use in order to facilitate discovery and use.
- Each tutorial needed its own page.

Evaluate

Throughout the design process, we constantly evaluated how the design would benefit our users. If we identified a problem, we immediately began redesigning the element to improve the user experience.

As the design of the portal began to come into focus, we began thinking about the technology we could use to build it.

Portal Technology

Adapting Technology to Needs

As the design was coming into shape, we needed to consider what technology we were going to use. Thinking about the technology at this point allowed us to adapt the technology to our needs while looking for ways to enhance the design by leveraging the capabilities of the chosen technology.

Technology Analysis

Before implementing the technology that would be used to build the portal, we followed a similar analysis process used when considering our users and user needs. While keeping the users, user needs, and use cases in mind, we evaluated the technology by focusing on three main questions:

- What technology is available to us and at what cost?
- Does the technology have added value or does it enhance the design in anyway?
- Is the technology customizable?

Availability and Cost

Since we were planning on adding a section to our website, this in essence became a non-choice; however, we continued with the process as it would help us implement the portal design. The library subscribes to and uses Springshare's LibGuides CMS as our website content management system. The benefit to using this was that there would be no additional costs and there is already staff familiarity with the product.

Added Value

With our subscription to LibGuides CMS, we could use a Springshare API to bring LibGuide content directly into Blackboard course shells. This capability facilitates one of the stated use cases of having faculty push the tutorial content to students through their Blackboard course shells.

Customization

The LibGuides CMS platform is very customizable. You can quickly build out sections with multiple pages, the pages can be setup with customizable templates, you can edit the html code, and you can add and adjust CSS styling.

So although it really was a non-choice to use LibGuides CMS, this technology did have some key capabilities and benefits that we could leverage in designing our tutorial portal.

Building the Portal

Once we had the design that incorporated the key user-centered elements and had chosen the technology, it was time to build the portal for our tutorials. This was a complicated process; however, by using a few strategies in concert with the technology, the project progressed smoothly.

When implementing a project, use these strategies with your technology:

- **Leverage the Technology:** Be aware of and leverage the capabilities of the technology available to you. This applies to features of licensed products and to freely available web tools like Bootstrap.

- **Learn CSS Tricks:** When creating something online, learn simple CSS tricks, as they can help customize a product to your individual needs.

```css
{} cssExample.css  *  ✕

C: > Users > fitzroyd > Documents > Dan > {} cssExample.css >

 1
 2
 3
 4    /*                          CSS for Library Tutorials        */
 5
 6    p {font-family: 'Roboto', Helvetica, Ariel; font-size: 14px;}
 7    h2 {font-family: 'Roboto', Helvetica, Ariel;}
 8    h3 {font-family: 'Roboto', Helvetica, Ariel;}
 9    h4 {font-family: 'Roboto', Helvetica, Ariel;}
10
11    /*                        Responsive Thumbnail Grid            */
12
13    #grid { width: 100%; font-family: 'Roboto', Helvetica, Ariel; }
14    #grid ul { list-style-type: none; display: block; padding-left: 0px; }
15    #grid li { display:block; float: left; margin-right: 30px;
16              padding-bottom: 15px; width: 185px; }
17
18    /*                        Transcript Buttons                   */
19
20    .btn-primary#directions { background-color: #003366!important;
21                              background-image: none; border-color: #003366;}
22    #directions.btn-primary:hover { background-color: #4D4D4D!important;
23                              background-image: none; border-color: #4D4D4D;}
24    #directions:visited { color: #ffffff; }
25
26    /*                        Expandable Transcript Section            */
27
28    .card2 {border: 1px solid rgba(0,0,0,0.15); border-radius: .35rem;}
29    .card-header { border-bottom: 1px solid rgba(0,0,0,.15);
30                  background-color: rgba(0,0,0,.05); padding: 1px; }
31    .card-body { margin: 20px; }
32
```

- **Be Flexible:** As you implement a project and learn more about the tools you are using, be flexible and incorporate your learnings into your design.

Following these strategies allowed us to use and adapt the technology to build out a portal that conformed to the needs of our users.

Collaboration

Strength Through Cohesion

In order to complete such a large project, we needed to collaborate with our colleagues, which ultimately strengthened our project as we were able to incorporate multiple viewpoints and harness the various strengths of the individuals on the team.

Developing the Learning Objects

Ask:

- Who is involved in the project?
- What is each person's role?
- How do you work together effectively?

The adage is true—many hands make light work. Working together with a group of people on creating digital learning objects can make the whole process easier. But it can be difficult to manage without a clear plan and workflow. It's important to determine who will be involved in the project and their exact role throughout the length of it.
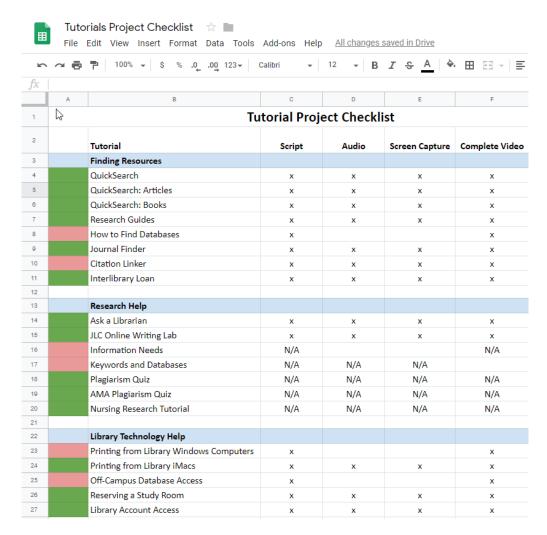
Together, the team brainstormed ideas for videos and tutorials. For the videos, each member volunteered to write at least one script for a given topic. At first, we used a shared GoogleDrive for script writing, editing, as well as video file editing and uploading. Since late 2018, we moved all project files over to Office365. Everyone was asked to help edit others' drafts. Volunteers were asked to provide voice talent to the videos. Ula and teammate Mark were responsible for the screen casting and editing of the videos, respectively. After initial review, Ula would then upload the video online (first to Vimeo, and now to a YouTube Channel).

For the LibWizard tutorials, Ula consulted with other librarians about the content, but was solely responsible for their creation. The LibWizard platform does not allow for simultaneous collaboration, so it made more sense for one person to create the content and then ask for feedback from the other team members.

Flexibility was key throughout the entire process. Things that sounded good on paper, turned into distracting tongue twisters when we read them out loud.

Project Management

With so many people working on the different parts and processes needed to successfully deliver the DLOs through the online portal, organization and project management became critical. One simple method of project management is to create a shared spreadsheet in either Google Drive or Office365.

Tutorials Project Checklist

File Edit View Insert Format Data Tools Add-ons Help   All changes saved in Drive

Tutorial Project Checklist

Tutorial	Script	Audio	Screen Capture	Complete Video
Finding Resources				
QuickSearch	x	x	x	x
QuickSearch: Articles	x	x	x	x
QuickSearch: Books	x	x	x	x
Research Guides	x	x	x	x
How to Find Databases	x			x
Journal Finder	x	x	x	x
Citation Linker	x	x	x	x
Interlibrary Loan	x	x	x	x
Research Help				
Ask a Librarian	x	x	x	x
JLC Online Writing Lab	x	x	x	x
Information Needs	N/A			N/A
Keywords and Databases	N/A	N/A	N/A	
Plagiarism Quiz	N/A	N/A	N/A	N/A
AMA Plagiarism Quiz	N/A	N/A	N/A	N/A
Nursing Research Tutorial	N/A	N/A	N/A	N/A
Library Technology Help				
Printing from Library Windows Computers	x			x
Printing from Library iMacs	x	x	x	x
Off-Campus Database Access	x			x
Reserving a Study Room	x	x	x	x
Library Account Access	x	x	x	x

Assign each tutorial a row and each step or phase a column. As a team member completes a step, they can check it off in the appropriate box. Then as the entire process get complete for a tutorial, change the status color from red to green. This provides a simple and clear way of keeping track of the project and at the same time provides a channel of communication within the team.

Our Tutorials and Portal

Sacred Heart University Library

Tutorials

Tutorials at Sacred Heart University Library

Digital Learning Objects

Videos:

When creating content for videos, we focused on library services and tools that needed more marketing and instruction. This included videos on how to book study rooms, the chat reference service, and research tools, such as Citation Linker and Interlibrary Loan. Another major topic was our EBSCO Discover search which we named QuickSearch. We dedicated three videos to this: a general intro, and then two separate videos on how to find articles and books.

QuickSearch: Articles Video Tutorial

In this short video, you will learn how to quickly find articles, including peer reviewed articles, in QuickSearch.
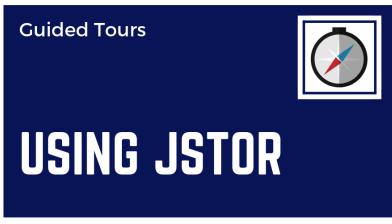

Guided Tours:

Using LibWizard, we created "guide on the side" tutorials to instruct students and faculty on how to use individual databases. Before developing the portal, these were not branded in any way. They were uniform in the way they functioned and in their landing page, but we did not have a good way to refer to them as a whole. Ula asked the rest of the library staff to vote on a name for this series of tutorials. The name "Guided Tours" was the winner!

Using JSTOR Tutorial

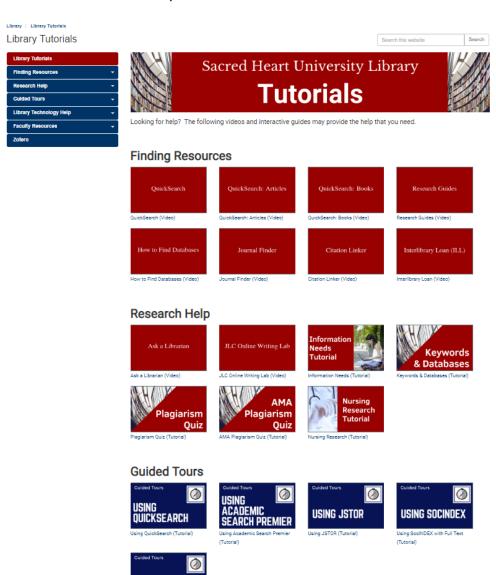In this tutorial, you will learn how to search the database JSTOR.

Using JSTOR Guided Tour Tutorial

Tutorial Portal Features

Browsable Landing Page:

The final design of the landing page of our Tutorial portal provides a browsable space for all our DLOs while incorporating many of our stated design features and user needs. Catering to multiple learning preferences, the main area contains both image thumbnails and text links to the digital learning objects. In addition, the side navigation tabs provide another way to browse the material textually. The digital learning objects have been sorted into groups based on the needs of the users, which helps quickly guide users to the information that they need.

Tutorial Pages:

Each digital learning object resides on its own page within the Tutorials section. The pages have been kept simple and clean to enhance the user experience by limiting the amount of information displayed to a few key items: a title, a short description, the DLO prominently displayed, and a couple helpful links at the bottom.

Transcript Accordion Button:

To help keep the pages simple, clean, and east to use, we used an accordion-style button link to provide the HTML of the transcript of the video DLOs. For those users that want that information, they simple click the "View Transcript" button to display the transcript text and screenshots on the same page. Having that text in the HTML code for the page may also help with search engine optimization.

How to Find Databases Video Tutorial

In this short video, you will learn how to find databases from the Sacred Heart University library's website.

Transcripts

Video Transcript

How to Find Databases

In this short video, you will learn how to find databases from the Sacred Heart University library's website.

Databases contain published articles from journals, newspapers and magazines, as well as, reference materials, reports and other documents. The SHU library provides access to general and multidisciplinary databases, and databases specific to a particular subject or field of study.

To access the databases from the library's website, click on the "Databases" tab just above the "QuickSearch" box in the middle of the page. Here you have the option to search for a specific database using the search field on the page.

You can also view our databases by clicking the "Databases A-Z" link. This allows you to browse all our databases alphabetically.

A-Z Databases
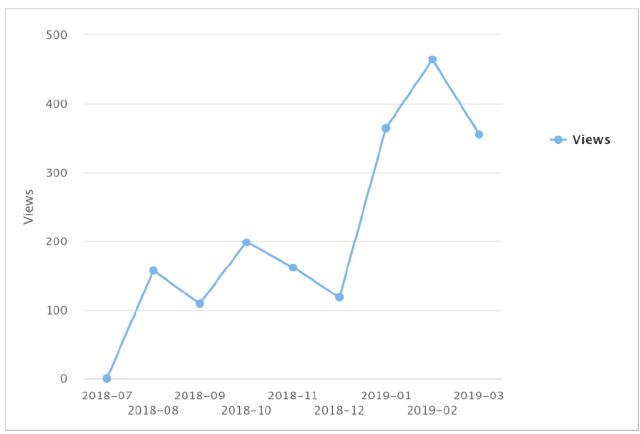
Find the best library databases for your research.

Moving Forward

Building on Our Experiences

We learned a lot throughout the processes of both building the tutorials and creating the portal. Moving forward, we plan to use the knowledge we gained from our experiences to enhance both the digital learning objects and the portal showcasing them.

Portal Usage

LibGuides statistics July 2018-March 2019

Usage of the Tutorials page on the SHU Library website has grown. The chart above shows the monthly usage statistics from the time period of July 2018 (when the page was not live yet) through March 2019. In the Fall 2018 semester, there was some usage of the tutorials section with an increase in January and February 2019. In January, the page was featured in a digital newsletter to graduate students and faculty. In February, the Tutorials Page was the Featured Resource on the library's website, driving traffic to the page significantly.

Views:

- 08/18: 157
- 09/18: 109
- 10/18: 199
- 11/18: 162
- 12/18: 118
- 01/19: 365
- 02/19: 464
- 03/19: 356

<div align="center">Video Usage</div>

Vimeo

Originally, we hosted our video tutorials on Vimeo. The platform is very easy to use but did not have a lot of options with the free version. The usage and views statistics were limited, so we switched our hosing to YouTube.

Number of plays on Vimeo (July 2017-August 2018)

Title	Number of Plays
Searching for Wordin Avenue	1659
JLC Online Writing Lab	233
Off-campus Database Access	233
Research 911 Citations	90
Faculty Files: Library Resource Builder Part 1 Introduction	77
QuickSearch: Articles	63
Faculty Files: Embedding Library Content	59
Interlibrary Loan (ILL)	55
QuickSearch: Books	54
OER Crash Course part 1	54
Faculty Files: Library Resource Builder Part 3 Advanced Features	48
Research 911 Peer Review	46
Citation Linker	45
Faculty Files: Library Resource Builder Part 2 Creating Reading Lists	37
Library Account Access	35
QuickSearch	32
OER Crash Course part 2	31
Ask A Librarian	26
Research Guides	24
How to Find Databases	23
Printing from Library Windows Computers	20
Reserving a study room	17
Printing from Library iMacs	17

YouTube Analytics

Video	Views		Watch time (minutes)		Impressions	Impressions click-through rate
☐ Total	900	100.0%	2,267	100.0%	3,836	5.2%
☐ Searching for Wordin Avenue	111	12.3%	1,507	66.5%	270	6.7%
☐ JLC Online Writing Lab	106	11.8%	71	3.1%	180	5.6%
☐ Off-Campus Database Access	99	11.0%	64	2.8%	142	6.3%
☐ Quick Search: Articles	52	5.8%	68	3.0%	54	9.3%
☐ What is QuickSearch?	49	5.4%	53	2.3%	147	6.8%
☐ Zotero: Editing Citations	44	4.9%	43	1.9%	294	7.8%
☐ Zotero: Adding Citation Styles	38	4.2%	33	1.5%	196	5.1%
☐ Organizing your Zotero library	33	3.7%	33	1.4%	180	3.9%
☐ Journal Finder	28	3.1%	27	1.2%	56	3.6%
☐ Zotero: Adding items by PDF	26	2.9%	24	1.1%	125	8.0%
☐ InterLibrary Loan (ILL)	26	2.9%	17	0.8%	107	5.6%
☐ Zotero: Adding items manually	20	2.2%	14	0.6%	111	6.3%
☐ Citation Linker	18	2.0%	20	0.9%	51	2.0%
☐ Library Resource Builder: Creating Reading Lists	18	2.0%	45	2.0%	108	4.6%
☐ Zotero: Adding from a Results List	18	2.0%	9	0.4%	39	15.4%
☐ Library Resource Builder: Advanced Features	17	1.9%	15	0.7%	115	5.2%
☐ Printing from Library Windows Computers	16	1.8%	5	0.2%	161	3.7%
☐ Research 911: Citations	15	1.7%	12	0.5%	93	3.2%
☐ How to Find Databases	15	1.7%	14	0.6%	57	3.5%

It seems like people are not watching most of our videos all the way through, unfortunately. In general, the new Zotero videos have the best impressions and impression click-through rate, but they are not just for our SHU community.

Reflections

Video content ages quickly. Changes in our services, particularly when out of our control (campus printing service) make video content we created obsolete. Although useful for introducing and marketing specific services the library provides, the question remains whether it is worth staff time and effort to develop more videos or even update the videos already made.

Moving Forward

Search Engine Optimization (SEO)

As we worked to build the portal, we realized that our simple design may have created an issue for discovery via search engines, whether external giants like Google or our internal site search. Many of the pages in the portal simply had the title of the tutorial and the embedded video. This did not expose much data to search engines. This was one of the reasons why we quickly implemented adding the HTML version of the transcripts to the pages in the accordion sections closed by default. This allowed us to keep the pages simple while adding a greater amount of relevant text to the page. Moving forward, we are working on enhancing the pages with more metadata to improve the visibility of the pages to search engines. These enhancements include adding system tags to the pages, adding a short description metadata field, and adding a short description to the text on the page.

Usability Testing

Even though we have deployed a portal for our tutorials on our website, we understand that it is not a finished product set in stone. While we designed and built both the tutorials and the portal with our users firmly in mind, we need test it out and request feedback. Looking ahead to the next stage of this project, we plan to conduct usability testing with users from our community. We will use the information gained from this testing to continue to enhance the portal to ensure it conforms to the needs of our users both now and moving forward.

Author Information

Daniel Fitzroy is the Discovery & Metadata Services Librarian at Sacred Heart University in Fairfield, CT. He received his MS in Library and Information Science from Simmons College. In his current role, Dan helps maintain access and discovery paths to resources by maintaining the library's various knowledge bases of print and electronic holdings, managing the discovery layer, administering the proxy service, aiding in website maintenance, and cataloging print materials. His professional interests include implementing workflows and tools that streamline the access of information. In his spare time he enjoys hiking with his wife and dog, cooking, and buying (too many?!) books.

Ula (Urszula) Lechtenberg is the Instructional Design Librarian at Sacred Heart University in Fairfield, CT. She received her MS in Library and Information Science from the University of Illinois, Urbana-Champaign. She also holds an MA in Russian, East European, and Eurasian Studies from the same institution. As Instructional Design Librarian, Ula has created videos, tutorials, and other digital learning objects in collaboration with fellow librarians and faculty members at Sacred Heart. Her professional interests include pedagogy and the science of learning, assessment, and issues within higher education.