

# Infographics as a Tool for Equity in Reference and Instruction

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## Abstract

Meeting students' needs and sustaining their attention in an asynchronous, online environment can be challenging, and it takes a lot of time to create digital resources like videos, tutorials, and research guides. Infographics are an ideal, multimodal tool for effectively engaging students by visualizing library spaces, services, and research processes. In this session, participants learned about digital equity issues in higher education and viewed examples of infographics used to orient students to physical library spaces and information literacy concepts for reference and instruction. Critical design considerations related to equity and inclusion in infographics included access, representation, language, and accessibility. The session also covered free tools for creating instructional infographics and practical ways to incorporate infographics into research guides, frequently asked questions, and tutorials. During the session, participants analyzed icons and shared their own ideas and examples of infographics that visualize library processes.

## Introduction

As reference and instruction librarians, we often create online instructional materials such as videos, research guides, and interactive tutorials that learners can use at their own pace. However, learners may find text-heavy instructional materials difficult to engage with in an asynchronous online environment. In her book *Data Visualization and Infographics*, Maudlin (2015) describes how: "Your patrons, especially those who have grown up in the age of the Internet, will expect to see data presented to them in a visual format, the easier to enjoy on a tablet or smartphone and the better to use on the go than a chart or page of prose" (p. 110). According to a recent survey of 1,500 fully online college students, 99% of respondents owned a mobile device and 44% used a mobile device to conduct all or almost all of their research (Aslanian et al., 2019). Visual and mobile-friendly instructional materials are increasingly relevant in the midst of the COVID-19 pandemic with many college campuses operating in a fully remote or hybrid environment. At California State University Dominguez Hills, alternatives to face-to-face instruction will continue through Spring 2021, and many of our students do not have access to laptops or reliable internet connection. CSUDH's student population is primarily Hispanic and Black, and live in local, under-resourced communities (California State University Dominguez Hills, n.d.). These are racial and class disparities that cannot be ignored in our instructional design. To supplement or replace synchronous online instruction, students need to be able to come away with a tangible resource that they can access from their phone. Well-designed videos and research guides can be effective but underutilized and time-intensive to create. Infographics as online teaching tools can at least mitigate some of these challenges to

creating and delivering instructional content asynchronously using free or low-cost design tools like Piktochart (<https://piktochart.com/>) and Canva (<https://www.canva.com/>). Librarians without formal design training can use these online graphic design tools to create engaging and mobile-friendly visuals with dynamic hyperlinks that can also be embedded into a webpage or LibGuide (Willenborg, 2017).

## **Summary of Practical Takeaways**

First, choose a library or information literacy concept you want to convey in your infographic. What do you want students to learn or be able to do after reviewing the infographic? A simple learning outcome like “Students will be able to use the library catalog to find and locate online and print books” can help refine your scope.

Next, consider how you will represent the concept through text and images. Who is your audience? What will they recognize? What may be unfamiliar to them? Is library jargon necessary and defined, or is there a way to describe the concept or process using plain language (Usability.gov, n.d.)? For example, instead of using the phrase “library catalog,” you might say: “Use OneSearch, the main search bar on the library’s homepage.” Visuals should also help quickly convey information to your audience instead of being purely decorative or distracting (Piktochart, 2015). This is also a place to be critical since simplified icons and graphics can still convey coded messages. For example, icons for “library” show buildings with decorative columns that reinforce the library as an institution where not all learners may feel comfortable or welcome.

After you’ve created your infographic, how will learners find and interact with your infographic? This can be as simple as hosting it on a LibGuide or the library’s Frequently Asked Questions to share a link or where learners can find it on their own. In Piktochart, you can copy the embed code from the sharing options and paste it into the source code of an HTML editor in a mobile-responsive wrapper. It may also be appropriate to pair an infographic with multiple choice or reflective questions in an interactive tutorial platform like SpringShare’s LibWizard tutorials or directly in the Learning Management System.

Finally, throughout your infographic design process, keep web accessibility and principles of universal design for learning in mind (W3C Web Accessibility Initiative, 2020; CAST, 2018). For text, use appropriately sized and styled fonts and a high ratio for color contrast for users with dyslexia, challenges with reading comprehension, or visual impairments (Weikel, 2017). For color checks, use online tools like the WebAIM Color Contrast Checker (<https://webaim.org/resources/contrastchecker/>) to generate a ratio aligned with Web Content Accessibility Guidelines (WCAG). Infographics should also be available to learners as screen-reader accessible PDFs that are remediated for reading order, alternative text, and additional features using Adobe Acrobat Pro (Adobe, n.d.).

## **Activities**

### *Pre-session Survey*

What is your experience with infographics?

- I've created an infographic for reference/instruction.
- I've created an infographic, but for something other than libraries.
- I haven't created my own infographic, but I've used them for reference/instruction.
- Infographics for reference/instruction is new to me.

### *Post-session Survey*

How likely are you to create an infographic for reference/instruction for your library after this session?

- Very likely - I'm so inspired!
- Somewhat likely - I'm curious to try it out.
- Not likely - That's okay!

### *Analyzing Icons*

Directions: Review and share your reflections on the first page of search results for "library" and "evaluate" from The Noun Project (<https://thenounproject.com/>). What comes to mind when you see these images? What isn't represented?

### **References**

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Willenborg, A. (2017). Beyond clip art. *Kentucky Libraries*, 81(1), 15-20.

<http://library.palcomtech.com/pdf/5425.pdf>

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<https://www.usability.gov/how-to-and-tools/methods/writing-for-the-web.html>

## Appendix 1: Presentation Slides

TESSA WITHORN | ONLINE LEARNING LIBRARIAN  
CALIFORNIA STATE UNIVERSITY DOMINGUEZ HILLS

# INFO- GRAPHICS

as a tool for equity in  
reference and instruction

▶ CARL VIRTUAL CONFERENCE | JUNE 5, 2020

The slide features a yellow and orange color scheme with various geometric shapes and icons. On the right side, there is a yellow hexagon, an orange diamond, a blue square, a blue circle with a yellow folder icon, a black diamond, and a yellow square with a white lightbulb icon.

Slide 1: Introduction

## After this session...

**PARTICIPANTS WILL BE ABLE TO:**

- describe **best practices** for creating infographics

**PARTICIPANTS WILL BE ABLE TO:**

- critical analyze issues of equity and inclusion in **infographic design** related to representation, access, and accessibility

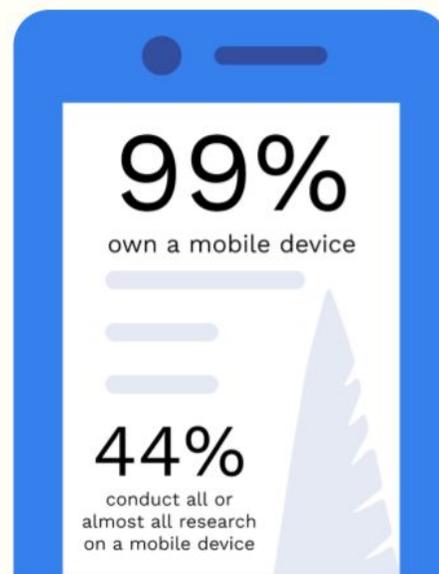
▶ PRESENTATION MATERIALS ONLINE AT <https://bit.ly/carl-20-infographics>

The slide has a blue header with the text 'After this session...'. Below the header, there are two light blue boxes with dark blue headers containing the text 'PARTICIPANTS WILL BE ABLE TO:'. Each box contains a bulleted list of outcomes. At the bottom, there is a blue play button icon followed by the text 'PRESENTATION MATERIALS ONLINE AT' and a blue link.

Slide 2: Session outcomes

## Why use infographics?

“Your patrons, especially those who have grown up in the age of the Internet, will expect to see data presented to them in a **visual format**, the easier to enjoy on a tablet or smartphone and the better to use **on the go** than a chart or page of prose”



Sources | Maudlin, Sarah. *Data Visualizations and Infographics*. Rowman & Littlefield, 2015, p. 110.

Aslanian, Carol B., David L. Clinefelter, and Andrew J. Magda, *Online College Students 2019*.

Slide 3: Why use infographics?

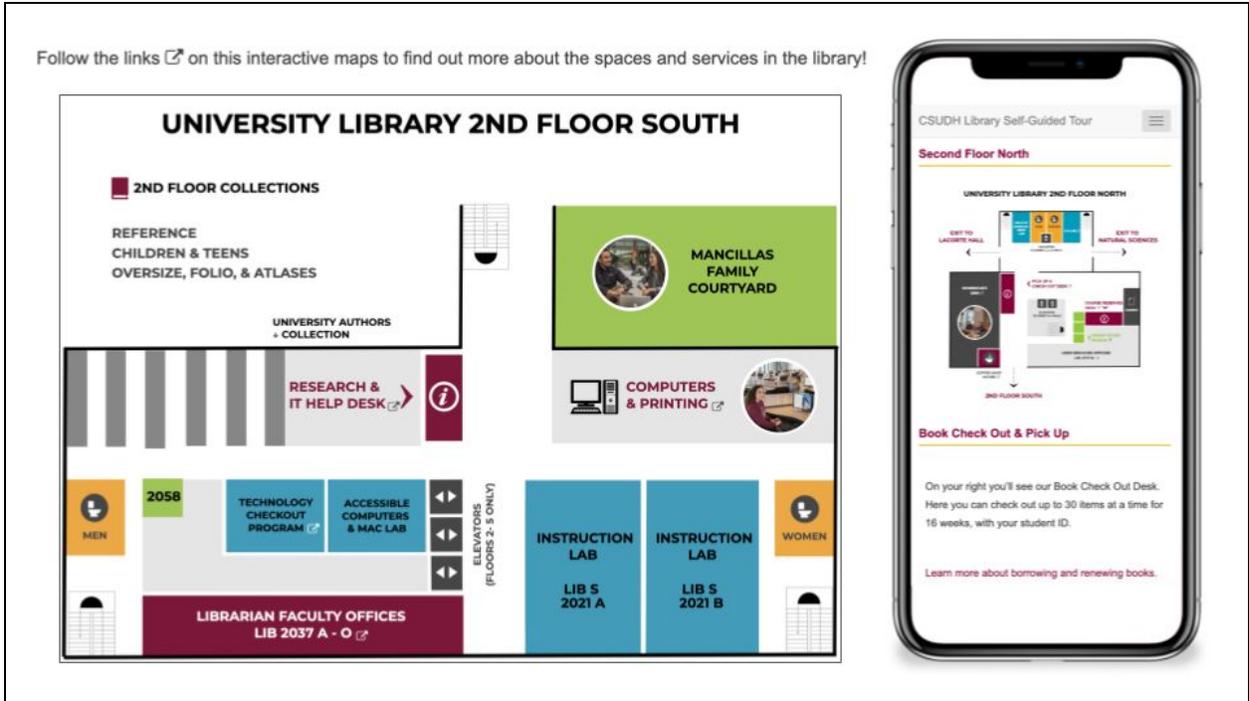
The infographic is titled "LOOKING FOR A BOOK?" and is divided into four numbered steps:

- 1 START IN ONESEARCH**  
This is also the main search bar on the library's homepage. It shows a screenshot of the CSUDH library homepage with a search bar.
- 2 IS IT AVAILABLE IN THE LIBRARY OR ONLINE?**  
Once you find the book you need, it may be at the library or available as an ebook to read online. It shows two options: "Available at CSUDH Library" (with a book icon) and "Online access" (with a checkmark icon). The first option is for "Five lectures on psycho-analysis" by Sigmund Freud (1956-1939) [2017], which is available at CSUDH Library 3rd Floor (BF 173.F6784 [2017]). The second option is for "The Interpretation of Dreams (3rd Edition)" by Sigmund Freud (2003), which is available online.
- 3 FINDING BOOKS IN THE LIBRARY**  
There are 3 common locations for books:
  - On the Shelf:** Note the call number and go to that range on the 3rd or 4th floor of the library.
  - In Storage:** Sign in and request. We'll have it ready to pick up in a few hours to 3 business days at the Book Pick Up Desk.
  - Course Reserves:** Ask for the book at the Course Reserves desk by title, course, or professor. Use it in the library for usually only 2 hours.
- 4 IF IT HAS A CALL NUMBER...**  
Books are arranged using Library of Congress call numbers in alphabetic and numeric order. Read the call numbers on the shelf from left to right until you find your book on the shelf. Books on similar subjects will be nearby!
  - Line 1:** Books are arranged in alphabetic order (B - BA - BF...)
  - Line 2:** Within the BF range, books are ordered by numbers from low to high (BF 1 - BF 10 - BF 173...)
  - Line 3:** Within the BF 173 range, books are ordered by letters & decimal numbers (BF 173.F65 - BF 173.F6784)

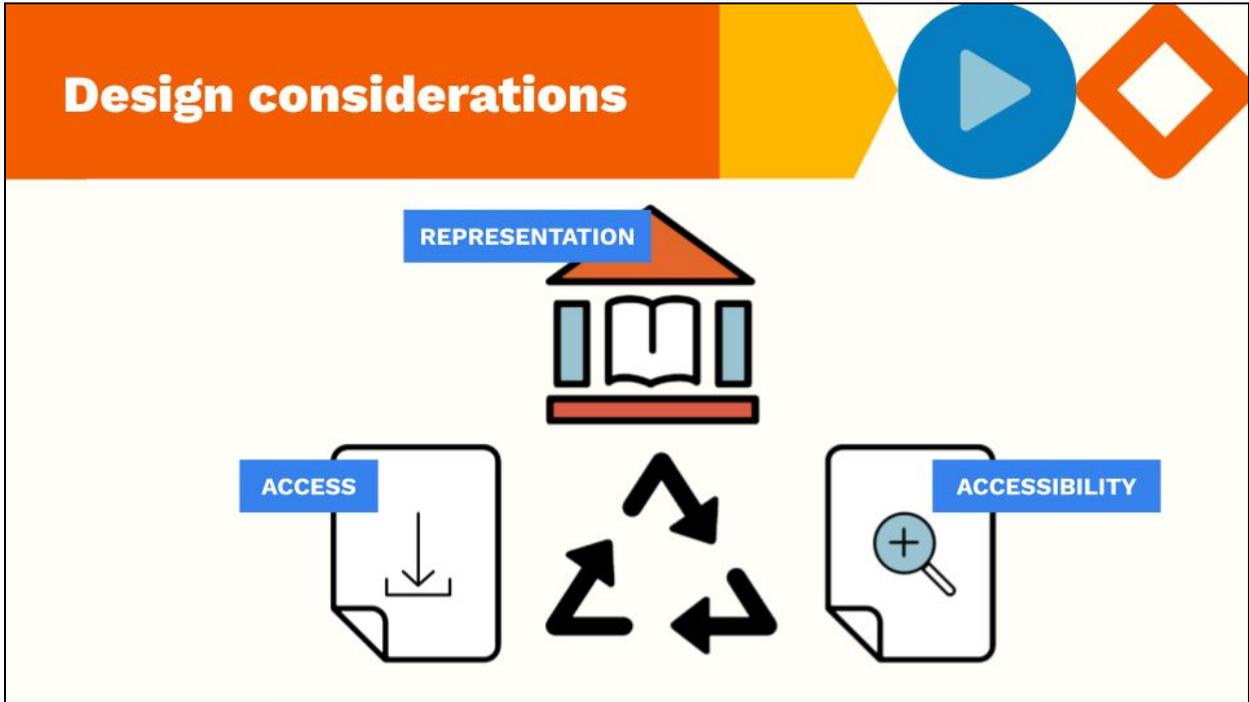
Once you've found your book, check it out with your university ID at the Book Pick Up & Check Out Desk on the main floor of the library. CSUDH students can borrow books from the shelf 36 weeks! Read more about borrowing & renewing books.

**STILL NOT SURE? ASK THE RESEARCH HELP DESK!**

Slide 4: Infographic example “Looking for a Book?” from CSUDH



Slide 5: Infographic example of library floor maps at CSUDH



Slide 6: Design considerations

# REPRESENTATION

- What library or information literacy **concepts** do you want to convey?
- Who is your **audience**? What will they recognize? What may be unfamiliar?
- How do common **images or icons** relate to this concept? What isn't represented?

## RECOMMENDED TOOLS:

- [The Noun Project](#)
- [Flaticon](#)
- [The Piktochart Advanced Handbook](#)

Slide 7: Representation

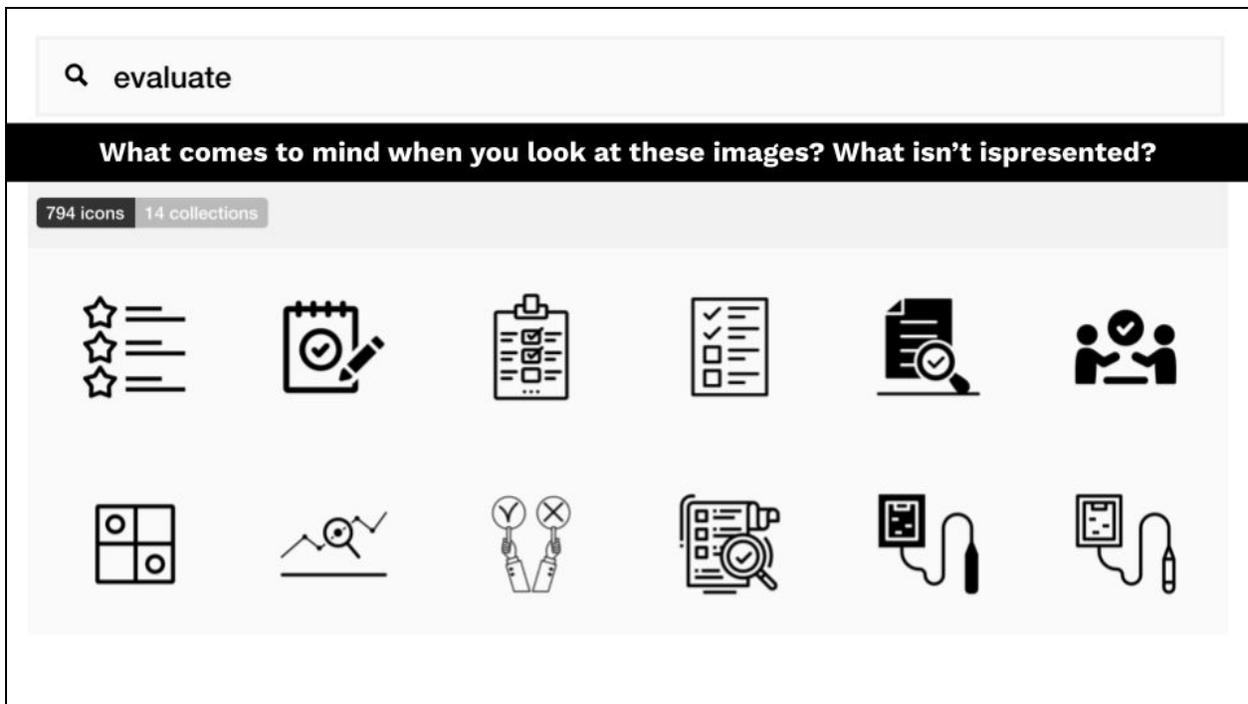
Q library

**What comes to mind when you look at these images? What isn't ispresented?**

6,690 icons 133 collections



Slide 8: Activity analyzing icons of "library" from The Noun Project



Slide 9: Activity analyzing icons of “evaluate” from The Noun Project

ACCESS

- How will learners **find** your infographic?  
Where is it linked to?
- Can they download it, or use it **offline**?
- Where appropriate, is it paired with a **learning activity**?

RECOMMENDED TOOLS:

- Embedded in LibGuides, FAQs, and attached as a PDF
- LibWizard Tutorials and Quizzes
- Embedded in the Learning Management System or sent directly to students during reference interactions.

Slide 10: Access

**CSUDH UNIVERSITY LIBRARY**

CSUDH University Library / Ask Us

Ask Us

**Q. How can I read a research article?**

What are the parts of a research article? What kind of information is in each section?

Answer

**Links & Files**

- [Download Adobe Reader](#)
- [Anatomy of a Research Article \(Print & Screen Reader Friendly\)](#)

**Topics**

Articles   Research help

**ANATOMY OF A RESEARCH ARTICLE**

Research articles in the sciences and social sciences tend to be concise reports of results from quantitative and/or qualitative analysis. Focus on the discussion of results, methods, and limitations.

1

**Article information:** This includes the title of the article and the authors. You can usually find information about the publisher here too, like the journal name, volume, and issue number.

2

**Abstract:** A brief summary of the article that helps readers determine if its relevant to their interests. It sometimes follows the overall structure of the article with 1-2 sentences for the Background, Methods, Results, and Conclusions.

**Introduction or literature review:** Establishes the background of the topic, definitions of terms, and why the topic is important to study. Includes research questions or hypotheses, and references to previous studies.

3

**Methods:** Explains how the study was conducted so other researchers can replicate it. Includes population or sample size, tests and measures used to gather and analyze the data.

**Results:** The outcome of the study, usually just raw data. Results may be represented in figures or text, and include tables, charts, and graphs, and summary. There is little to no interpretation of what the data means or says about the topic.

**Discussion:** Summarizes the results in more detail and may compare results to previous studies. Talks about the implications of the study, what should come next, and what future research might investigate based on the results. A conclusion may address gaps or limitations in the methods.

**References:** A complete list of sources used by the authors, usually organized by authors last name or numbered in the order they appeared in the article. A great place to find relevant studies that you can use too!

**CSUDH UNIVERSITY LIBRARY**

Slide 11: Example of embedded infographic “Anatomy of a Research Article” in LibAnswers at CSUDH

# ACCESSIBILITY

- Is it written in plain language? Are fonts and contrasting colors legible?
- Can a user follow the organization or sequence?
- Could someone using a screen-reader use your infographic?

**RECOMMENDED TOOLS:**

- [Web Content Accessibility Guidelines \(WCAG\)](#)
- [WebAIM Contrast Checker](#)
- [Adobe Acrobat Pro DC Accessibility Checker](#)

Slide 12: Accessibility

## Questions?

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*Slide 13: Questions and contact*

## Appendix 2: Handout

Design considerations	
<p>What do you want students to be able to learn from your infographic?</p> <p><b>Representation:</b> What images and language will convey concepts for your audience?</p> <p><b>Access:</b> How will learners find and interact with your infographic?</p> <p><b>Accessibility:</b> Check for plain language, legible fonts and color contrast, order/sequence, and features for assistive technology.</p>	
Design tools	Accessibility tools
<ul style="list-style-type: none"><li>• <a href="#">Plktochart</a></li><li>• <a href="#">Canva</a></li><li>• <a href="#">Noun Project</a></li><li>• <a href="#">Flaticon</a></li></ul>	<ul style="list-style-type: none"><li>• <a href="#">WebAIM Contrast Checker</a></li><li>• <a href="#">HTML Colors from Image</a></li><li>• <a href="#">Adobe Acrobat Pro DC Accessibility Checker</a></li></ul>
Recommended readings	
<ul style="list-style-type: none"><li>• Maudlin, S. (2015). <i>Data Visualizations and Infographics</i>. Rowman &amp; Littlefield.</li><li>• Piktochart. (2015). <i>The piktochart advanced handbook: Using Piktochart like a pro</i>. <a href="https://piktochart.com/wp-content/uploads/2015/07/Piktochart-e-book-3-Using-Piktochart-Like-A-Pro.pdf">https://piktochart.com/wp-content/uploads/2015/07/Piktochart-e-book-3-Using-Piktochart-Like-A-Pro.pdf</a></li><li>• Weikel, J. (2017, February 22). Inclusive design: How to make your visuals accessible to all. <i>Piktochart Blog</i>. <a href="https://piktochart.com/blog/inclusive-design-make-visuals-accessible/">https://piktochart.com/blog/inclusive-design-make-visuals-accessible/</a></li><li>• Willenborg, A. (2017). Beyond clip art. <i>Kentucky Libraries</i>, 81(1), 15-20.</li><li>• Usability.gov. (n.d.) Writing for the web. <a href="https://www.usability.gov/how-to-and-tools/methods/writing-for-the-web.html">https://www.usability.gov/how-to-and-tools/methods/writing-for-the-web.html</a></li></ul>	