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Images and the Open Educational Resources (OER) Movement

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ABSTRACT

With the growing interest in faculty publication in Open Educational Resources (OER), librarians have not only been tasked in becoming well versed in locating OER materials for instructors but also assisting with intellectual property practices—public domain, Creative Commons, or permission rights. Digital images often need updating when a classroom presentation is moved from classroom use only to OER. Teachers usually use images from subscription databases and need copyright-free replacements. The difficulty associated in locating high-quality images and attribution descriptions is a barrier in publishing OER materials.

KEYWORDS

Open Educational Resources; OER; image; publishing; copyright

The Open Educational Resources (OER) movement has been a catalyst for allowing educational repositories of rich media that can be re-used or altered for online or in-person classroom instruction and, additionally, has opened a new area of publishing. OER has catapulted a strong interest in publishing materials allowing availability of educational resources on the internet without restrictive licenses, and allowing for redistribution and modifications in formal and in-formal learning environments (Organisation for Economic, 2007). Shank (2014) shares that OER materials can be found in educational repositories and digital libraries, university and college websites, educational software and entertainment media websites, governmental websites, professional organizations' websites, and web search engines. There are several general educational OER resources such as the OER Commons, Multimedia Educational Resource for Learning and Online Teaching (MERLOT), Connexions, Federal Resources for Educational Excellence (FREE), Commonwealth of Learning (COL) Knowledge Finder, the Kentucky Learning Depot (KLD), Directory of Open Access Journals (DOAJ), the Internet Archive (IA) and Creative Commons (CC). Sources for community college OER resources, include the Scholarly Publishing and Academic Resources Coalition (SPARC) forum, the Community College

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Consortium for Open Educational Resources (CCCOER), the North Carolina Learning Object Repository (NCLOR) or, for technical colleges, WISC-Online.

Some examples of discipline-specific OER resources in health sciences include the Repository of Physiology E-resources (ROPE), the Center for Cardiovascular Research (CCR) online resources that support training on conducting molecular biology research in a laboratory setting, The Sepsis and Sepsis Six e-learning package developed for nurse training at the University of Nottingham, School of Health Sciences, and the John Hopkins Bloomberg School of Public Health (JHSPH) and the Massachusetts Institute of Technology (MIT) partnership to allow courses accessible online to all through OpenCourseWare (OCW). There have even been open educational electronic games, such as DigesTower, created with the mission of combating childhood obesity in Brazil (Dias et al., 2016).

There is awareness of traditional and non-traditional avenues of publishing, each having their level of prestige in each unique academic discipline and institution. Some disciplines, such as the health sciences, do not consider publishing OER in the same category as traditional publishing but view it as in-line with educational missions of the institution in ensuring professionals are properly trained and a global comradery is in existence in the profession. The Association of American Medical Colleges' (AAMC) MedEdPORTAL is one example of an esteemed OER database for medical instructors. "MedEdPORTAL publications are encouraged and even formally included in the promotion and tenure guidelines of all faculty, including librarians, at the reviewer's medical school and valued as scholarly output" (MedEdPORTAL, 2016, pp. 251–252). In the health sciences, there is a value in publishing OER resources for the greater good and for professional development. Social aspects include bridging the learning divide globally. Anderson (2013) affirms that "open access journal articles are critical to expanding access to knowledge by scholars in the developing world and in fostering citizen science, by which everyone has access to the latest academic information and research results" (p. 81).

A significant problem that is present, though, is when faculty are contemplating creating an OER module with the use of images. The case is most evident when faculty members move from creating presentations and materials for class use, usually protected under the Fair Use copyright clause, to publishing presentations or papers with illustrations in academic journals, OER repositories, or any other type of publication. Medical educators may have embedded textbook and proprietary vendor database images, such as from *AccessMedicine* eBooks, *VisualDX* or *Primal Pictures*. A byproduct of OER has been the increased need for open source use of images for publication. Images need to be in the public domain, contain Creative Commons attributes, or permission needs to be granted from the copyright holders.

According to how the instructor is using the image, in a classroom presentation, conference presentation, in a course management system, or in a published work, further complicates usage rights and procedures. Once faculty would like to publish a classroom presentation for an OER repository or include presentation data in an article, images are usually the items needed to be updated.

Bridges and Edmunson-Morton (2011) conducted a survey to understand image-seeking behavior of freshman enrolled at Oregon State University (OSU) in the fall of 2009 and found that students gravitate toward using Google and other image resources online and rarely, if at all, use library, librarians, and/or archives, such as the OSU Libraries' Digital Collection and University Archives. As mentioned above, the resources least used are usually where OER objects live. From personal experiences, faculty may conduct similar image-seeking approaches when faced with changing a course presentation into an OER environment. Some images found via Google are very difficult to track original creators or authors to verify that the image is truly copyright free. If someone would conduct a Google Image search and use the *usage rights* filter, there is no proof that the image in the results list is open for use. Rarely do images contain usage rights permission information. A safe approach to avoiding copyright infringement is to use web resources that mention usage rights or become the author of original works using free or low-cost software or apps.

What is missing in the literature is current research relating to the use of open source digital images on publishing OER material, academic journal articles, and other publishing opportunities. The majority of the literature points to the use of OER in pedagogy and publishing within open source journals but no information is available about how OER images are playing a role in publishing in OER modules and aiding in publishing images within published works—open or subscription journals. Librarians of all disciplines have a new obligation to become familiar with OER general and digital image repositories to assist in not only finding objects, but familiarizing teaching faculty concerning the area of intellectual property of images and what this means when considering publishing in OER repositories.

Image repositories are abundant on the internet but it is difficult to find quality resources. Some examples include Pixabay.com, Wikipedia List of Graphics in the Public Domain, Wikimedia Commons, Google Images (with usage rights filter), Flickr Commons, Public Domain Photos.com, USA.gov, MorgueFile, NASA images, everystockphoto, Liam's Pictures from Old Books, Kentucky Digital Library (KDL), Digital Public Library of America (DPLA), Library of Congress, freeimages.com, and creative commons (Bartlett, 2015; Baker, 2008; Blakeman, 2010). The topic of image use in electronic media becomes more confusing when some companies allow for

reuse of images in digital platforms only, such as websites, blogs, wikis or social media outlets, via an embed only link. O'Leary (2014) reported that Getty Images, a for-profit digital image repository, has introduced a few images without licenses, fees and for non-commercial use for embedding with an html code. The author does state that it is difficult to find the filter to narrow down to this specific collection and, in addition, this access does not help with OER and publishing in academic journals since the images can only be added when connected to the internet. In the medical field, there are some open source image repositories such as the Public Health Image Library (PHIL) by the Centers for Disease Control and Prevention (CDC), Open-i Biomedical Image Search Engine by the Lister Hill National Center for Biomedical Communications, U.S. National Library of Medicine Health Education Assets Library (HEAL) Collection hosted by the Mountain West Digital Library, and the Digital Collections from the U.S. National Library of Medicine (NLM).

From my professional experience, faculty and students have difficulty understanding the differences between Fair Use and copyrighted images since there are no fixed definitions. Due to this occurrence, rarely are images cited in classroom presentations. This may also come from faculty's emphasis on citing articles and other traditional sources and ignoring images as a form of information that needs referencing. Johnson and Simpson (2005) detail reasons why faculty may have difficulty following copyright law. The list includes the following: Few educational organizational associations offer copyright law training which may lend to unawareness on the subject and, in addition, copyright law is open to interpretation and there is no simple test to determine compliance. Misinformation on the internet, the fact that digital items are intangible and theft is not obvious as in the physical world, the convenience of copying and pasting from sources, violations occur often so the norm becomes regular behavior, the difficulty involved in obtaining permission or paying for rights is laborious and time consuming, teachers justify copyright infringements for the good cause of education of bettering society; especially when associated with large textbook corporations for permission of use. It is safe to say that these infringements do occur to be more rampant in the classroom or curriculum modules than when the information or images are planned for publishing. As mentioned before, public domain, creative commons attributes and permissions are the three options for using images properly for publishing. Public domain means that exclusive intellectual property has expired for the media item and is open to the public for use. Creative Commons allow the creator to designate the level of restrictions for reuse. There are six Creative Commons license types:

	**Attribution (CC BY)**: distribute, remix, tweak, and build upon work, commercial use allowed, credit original creator.
	**Attribution ShareAlike (CC BY-SA)**: remix, tweak, and build upon your work even for commercial purposes, if they credit creator and license their new creations under the identical terms.
	**Attribution-NoDerivs (CC BY-ND)**: redistribution, commercial and non-commercial, as long as it is passed whole and unchanged, with credit to creator
	**Attribution-NonCommercial (CC BY-NC)**: remix, tweak, and build upon work non-commercially, and new works must acknowledge creator and be non-commercial, new author does not have to license their derivative works on the same terms.
	**Attribution-Non Commercial-ShareAlike (CC BY-NC-SA)**: remix, tweak, and build upon work non-commercially, credit creator and license new creations under the identical terms.
	**Attribution-NonCommercial-No Dervivs (CC BY-NC-ND)**: allow others to download your works and share them with credit to author, cannot change or use commercially.

In 2009, Google added commands to search for each type of image with special specific atributions, such as *&as_rights = cc_publicdomain* or *&as_rights = cc_sharealike* (Blakeman, 2010). Faculty can ask to use a particular copyrighted image in their publication but may be unsure if permission will be granted, have lack of time or lack of understanding associated with permission procedures. OER image resources circumvent the permission process. An author can add an open source image or alter the image according their needs with free software or software already on their computer. The author just gives credit to the creator. It is important to mention that citing the sources, even if the image is 'open,' is imperative and ethical.

Some medical faculty, for example, are not well versed in academic publishing practices, especially concerning images. Some have professional knowledge from working in private practice or in a hospital environment and made a career move to education or have practiced outside of the United States with differences in copyright and publishing environments. The same can be said of other teaching faculty that come to education from corporate, self-employment, or another environment outside of academia. There have been some attempts in educating the teachers on proper image use. The Digital Image Rights Computator (DIRC) is an online tool that, through a series of questions, directs the user to understand an image's rights profile. One of the main reasons for the creation of the tool by the Visual Resources Association's Intellectual Property Rights Committee, is "…to address the need of the various constituencies within the academic environment to understand how the rights profile of a given image affects the potential uses that may be made of that image" (Kohls, 2006, p. 28).

A digital librarian's role may involve collaborating with teaching faculty or an instructional designer in transforming classroom presentations or modules filled

with copyrighted textbook or general images to copyright-free equivalents for OER considerations. This may involve finding and acquiring open images or designing or creating unique images for OER publication. An example may be finding one or several open source digital images free for use and adapting for personal lessons. With PowerPoint, for example, the faculty member labels the series of images according to their lesson objectives. They can save this as part of an OER presentation as .ppt file or use the 'Save As' feature to create a new image in .jpg format to include in an article. These options save time for everyone when image searches for a perfect image have been fruitless or a particular is non-existent.

Kandiuk and Lupton (2012) found, from completed surveys of 25 York University fine arts faculty, that the biggest barrier to finding images for teaching is "Too few good sources," "copyright considerations," and under the *other*

> category—"lack of technical knowledge to work with images; material being obscure, expensive, and difficult to obtain; the poor resolution of most images; a lack of contemporary material; not enough digital space to hold images; lack of video; and lack of finding aids for images" (pp. 28–29).

There are many places to find OER resources but the majority are thought of as existent in the *invisible web* or not easily findable with keywords via search engines. Searching for OER items is a mission not easily fixed with a Google Images 'usage rights' advanced search filter. Faculty, students and even librarians may not be able to assure the image is in fact open source sometimes. Faculty usually come to librarians with no recollection of where an image was found on their presentations, which is difficult for librarians to track origin. Notess (2009) noted that, "Unless you know the title of a specific clip or image that is also the title or file name used by that media file, word searches should capture description, tags, subject categories, and any other associated text" (p. 43). In essence, images have a lack of metadata to make them findable. Pile on the fact that OER digital image materials are usually embedded in modules or open source textbooks, and it makes images impossible to find. OER items are rarely indexed, but in the case of MedEdPORTAL, the AAMC is working to have the items placed in PubMed from MEDLINE, the largest biomedical literature database of citations/articles (MedEdPORTAL, 2016). Abeywardena, Tham, and Raviraja (2012) propose a more sophisticated OER search engine compared to Connexions or Wikieducator. The authors mention features of D-Index to locate pertinent OER resources. The search function takes into consideration the Four R's of Openness (Reuse, Redistribute, Revise, Remix), the levels of ALMS access (Access to editing, Level of expertise required to revise or remix, Meaningful editable, and Source-file access) and relevance based on search rank beyond title and description.

Hassall and Lewis (2017) conducted a survey to understand the three major barriers of adopting OER in physiology and medical teaching in the United Kingdom. Survey questions focused on three barriers identified by the authors—first-order barriers includes awareness of high-quality OERs, second-order barriers include motivation to embed and infuse OERs in a blended course curriculum, and third-order include skills and training in order to effectively use or possibly create OERs. In the first-order section, the authors concluded that the use of OERs was not a barrier but did find, through text feedback, that, "…difficulties in identifying relevant OERs or that the time taken to browse and check existing resources was simply greater than the time needed to create resources de novo" (Hassall & Lewis, 2017, p. 78). In addition, in second-order barriers area, educators reported a lack of time to identify material pertinent to their course subjects and barriers with copyright use concerning third-party material. The third-order barrier revealed a majority of sharing some support or very little support concerning OER institutional support—department, faculties or institution. There are many interlinked barriers in the adoption of OER in the curriculum which may translate to publishing activities—the lack of time discovering OER resources seemed to be an overarching dilemma, determination of including OER into their curriculum, and the conflicting evidence concerning OER in their effectiveness. If general modules are difficult to find on a topic, finding images is much more laborious.

There are many other barriers that may play into the OER image deficit. Kursun, Cagiltay, and Can (2014), through an online survey filled out by 1,637 faculty from 56 universities from Turkey, revealed that the top three perceived barriers related to OER is concern with intellectual property rights of the author and providing intellectual property rights of other's material, and faculty mostly do not see incentives in publishing OER materials. The 'Other' categories included the degree of faculty's willingness to share, concerns with increased plagiarism, university policy concerns, lack of time, no support from institution, risky to share in competitive environment and lack of technical skills or the required technology (computer, scanner, etc.).

The average computer owner owns image creating software on their computer already. For example, the Microsoft Suite: Word, PowerPoint, Publisher, Excel, can be used to create images by using the 'Save As' jpeg, .png, .gif, or .tiff. Our computers, either PC or MAC, come with basic image editing software. The professional graphic designer will be schooled in Adobe Illustrator, Photoshop, or Corel Draw. The best way to avoid the fair use vs. copyright issues surrounding images is to create images and graphs that accompany your presentations and published works. If creating your own images, it is important to read image submission specifications for the journal you are submitting to before beginning the design process. The specifications include file format, resolution, size, and how to cite the image in your text. If using an image from a source, it is important to document that the image is free to use for publication or contact the original

author for permission to use. The complexities of using images can be avoided by becoming the creator of your images.

Belliston (2009) encourages librarians to publish their own OERs, indexing and archiving them in accessible collections, use them in instructions, and be present during discussions concerning intellectual property policies and standards. Illowsky (2012), co-author of the open source textbook *Collaborative Statistics* stated,

> "Although I originally viewed the OER movement as one way to reduce the cost of a college education for students, I have become an advocate and activist as I have come to appreciate the professional development it offers me and my colleagues as both a way to interact and learn from each other and by the increased student learning options for our students" (p. 24). Publishing

OER has some interesting advantages, including becoming a tool for recruiting students to universities. When students were asked if OpenCourseWare, a type of OER, "Inspire you to enter/return to a formal program of study," 69% of survey participants chose "Very significant/significant benefit" and 18.5% chose "moderate/slight benefit" (Carson, Kanchanaraksa, Gooding, Mulder, & Schuwer, 2012, p. 26).

It is a reality that text is much more respected than images. Awareness is much stronger for giving credit to authors by quoting borrowed words or citing paraphrased ideas; but images are becoming more than decorative or an add-on. Images are a remarkable part of the research and presentation. There are many movements that are giving the image their dues. The data visualization movement's goal, for example, is to take information and visualize it in a way that, in a glance, the viewer can create new ways of thinking or make something difficult via a text-only document easily comprehended. Libraries are vibrant with makerspaces or computers with special editing software—proclaiming that creating images are no longer only for professional graphic designers, web designers or illustrators. The future is more conducive for researchers creating their own robust graphics to accompany their research and presentations or seek assistance from instructional designers and librarians to ensure the pictorial data is shown clearly and published ethically. Librarians may have a greater role in finding open source images for OER publication. In other words, the existence of visual literacy, under information literacy, will be expected to escalate and the OER movement is one monumental cause for that escalation.

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