

Open
Educational
Resources (OER)
Guide for
Students in
Post-Secondary
and Higher
Education

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The Commonwealth of Learning (COL) is an intergovernmental organisation created by Commonwealth Heads of Government to encourage the development and sharing of open learning and distance education knowledge, resources and technologies.



Commonwealth of Learning, 2016

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Table of Contents

1 Intro	duction	1
2 What	are OER? OER are not MOOCs	
	are OER relevant to students in post-secondary and er education?	3
4 Why	should students use OER?	5
	do I use OER?	
5.1	How can I tell whether a work is OER?	
	What is an Open Licence?	
	Public Domain	
	Creative Commons (CC) Licences	
	Top tips How do I find relevant OER?	
5.2	Scenario: How do I find images to use in a class presentation?	
5.3		
5.5	An important piece of OER etiquette	
5.4	·	
3.1	Determine the licensing	
	Select appropriate formats and tools	
	What is the difference between plagiarism and remixing?	
	How to apply a Creative Commons licence to your remix	
	How to use the CC Add-In for Microsoft Office	20
	Attribute your sources	
	What is the difference between citation and attribution?	
	Distribute your work	
	Summary: Scenario	
5.5	How do I use open access for research and publications?	
6 Conc	lusion	25
Append	lix A	26
Append	lix B	29
• •	Open Textbooks	
	OpenCourseWare	31
	Video Resources	
	OER Directories and Repositories	
	Open Access Journals	
	Open Images	
	Content Creation Initiatives	
Notes .		38
Referen	ces	40

Introduction

This guide provides an introduction to Open Educational Resources (OER) for students in post-secondary and higher education. It is aimed at helping you, as students, to explore the value of good quality OER, and provides an introduction on how to find and use OER. It intends to serve primarily as a source of reference for students in the Small States of the Commonwealth, but we hope it will be useful to students from any country.



What are OER?

At the 2012 World OER Congress in Paris, attended by governments and educational and OER experts, the Paris OER Declaration was passed. The Declaration calls on governments worldwide to openly license publicly funded educational materials for public use.

OER are not MOOCs

Most MOOCs (Massive Open Online Courses) allow users only fair-use rights, or rights stated in specific licences. Most of them cannot be legally copied, and users cannot update them or use them to create their own courses.¹

There is no one standard definition of OER. In essence, they are educational materials and resources that are offered freely, are openly available to anyone and, under some licences, allow others to reuse, adapt and redistribute them with few or no restrictions.

OER can include lecture notes and slides, lesson plans, textbooks, handouts given to students, videos, online tutorials, podcasts, diagrams, entire courses, and any other material designed to be used in teaching and learning. Thus, the

scale of OER can vary significantly. They can be as large as a textbook or as small as a single photograph. They can make up an entire course or curriculum or can be used to enhance existing textbooks.



Why are OER relevant to students in post-secondary and higher education?

Post-secondary and higher education are changing. In many countries, student numbers, tuition fees and the general cost of education are all increasing without any corresponding increase in government subsidies to educational institutions. This means that the financial burden of participating in higher education is increasingly being placed on students and their families.

In today's digital world, students face an abundance of choices, and the idea of studying at one place and for one period no longer applies. Rapidly growing technological changes are occurring with the growth of online open courseware and free online instruction to cater for students who desire on-demand courses.² Students now have access to flexible learning opportunities to meet their needs, and to around-the-clock information and resources to support them. In short, you now have much more choice about how and where to learn and fewer time and money constraints.

The motivation behind OER is to provide more equal access to knowledge and educational opportunities, and for educational resources to be available to all. Because OER remove restrictions around copying resources, they can reduce the cost of accessing educational materials, such as textbooks, for students. Initiatives such as BC Campus (https://open.bccampus.ca/find-open-textbooks) allow students to access textbooks for a number of subject areas (see Appendix B for more examples of open textbooks).

Now that OER and other digital resources are so readily available, universities and institutions are no longer the only holders of knowledge, which is creating a shift in how teaching is done and how students' learning is supported.

Unlike online resources that are free but not openly licensed, students can legally adapt OER as much as they like to meet their own needs.³

Allowing the adaptation of materials provides one mechanism for you to become a more active participant in your education, learning by doing and creating, not by passively reading and absorbing. Thus, across the world, OER are being used to create more engaging, personalised learning experiences for students.⁴



Why should students use OER?

As more OER are created and shared, you have access to more educational materials that can enhance your learning opportunities, and give you more independent and flexible learning opportunities.⁵

to check your understanding of key concepts. The resources can be accessed repeatedly, on demand, so you can use them over and over

again until you have mastered the area of study.8

For example, you can use OER as a supplementary resource to help you to understand difficult concepts that are not clearly explained in your traditional textbook or that you could not follow in a lecture. You can go through course materials before your class, enabling you to be better prepared. You can source OER to enhance your assignments and projects, or you can access OER for supplementary reading in topics that particularly interest you.

Some OER have built-in assessments, which allow you

OER can lower the cost of your education because the course materials are free. You can source OER textbooks that you might be able to use instead of ones you have to pay for. Some students who cannot afford to buy expensive textbooks or other course materials can afford to take courses that use OER.⁷

Save money!



If you want to revisit your course materials after the term or semester is over to refresh your memory or to study something in more detail, you

Explore course materials before you enrol for a course!

Students can compare courses, allowing you to make a better informed decision about your study choices.

can. OER can help you reinforce what you have learned and further develop your level of understanding in a subject area. ⁹ As you have access to resources from across the world and from different contexts, you can see and apply knowledge in a wider context than your course would otherwise allow — for example, you can gain an international perspective on a subject. ¹⁰

Many OER are of good quality. Some have been evaluated by experts, while ratings and comments have been posted on some OER sites. You can post your own evaluations and you can look at other user reviews which can help you decide whether to use a resource. Of course, as with everything else you access on the Internet, you must evaluate the quality of an OER before deciding whether or not to trust it.



OER are generally very accessible. As they are usually digital, they are often available right away, so resources are often current. Also, there is often less turn-around time after changes or updates are made, so updated materials are usually made available immediately. This is useful for getting current, up-to-date information, and is also very helpful for making research results available without delay to showcase them to the widest possible audience.

Another benefit of OER is that they often respond to the different learning styles of students. Resources are presented in a number of different ways — for example, in video format or three dimensionally, which can be useful if you learn more visually.

Create OER as part of the learning process

Content created by students during learning activities could form part of OER. You can adapt and manipulate OER, so they can be valuable resources when you are completing projects and assignments.

For example, you can:

- take a Geography textbook and add examples and landmarks from you own region;
- translate a storybook into another language;
- create new illustrations for an existing story in an art class;¹² or
- make a new, modified version of your work available to the public — a wonderful way to share work with other students.

Developing and using OER encourages you to interact with and support your peers (and benefit from their interaction and support). If you look in the right places, you can interact with students from across the world and develop a more collaborative approach to learning. This also provides you with an opportunity to work across sectors, institutions and subject disciplines, thus enhancing your learning opportunities. This encourages you to work in ways that are increasingly in demand in the 21st-century workplace, which brings further long-term benefits.

5 How do I use OER?

5.1 How can I tell whether a work is OER?



No © does not mean OPEN!

To identify whether or not a resource is an OER, the simplest way is to look for the licence. Works that are published are, by default, protected by copyright law, although they will not always display the familiar © to draw your attention to this. If the published resource has an open licence associated with it, then you can assume that it is an OER. If it does not, it means, unfortunately, that it is most likely protected by copyright law, so copying it is illegal.

What is an Open Licence?

An Open Licence is a legal statement that allows content to be open and free. There are different licences that can be used to share educational resources with others. Open licences do not replace copyright legislation. They work alongside legal frameworks and enable the creators of resources to modify copyright terms to best suit their own needs.

Public Domain



Public Domain materials are creative works where the intellectual property rights have expired and there is no longer any copyright attached to them. The public owns these works, not an individual author or artist. Anyone can use a public domain work without having to obtain permission.

Creative Commons (CC) Licences

The most commonly used open licence is the Creative Commons (CC) licence (see https:// creativecommons.org). Creative Commons have released several copyright licences. The different kinds of licences allow creators to communicate which rights they reserve, and which rights they waive for the benefit of users or other creators. Creative Commons licences consist of four usage conditions, which can be mixed and matched to form one of six licences.



Creative Commons have simple and easy-to-understand copyright licences. They provide a simple, standardised way to give the public permission to share and use your creative work — under the conditions of your choice.

Table 1 Creative Commons Licence Usage Conditions



The **Attribution** licence means you can share, copy, redistribute, display, perform, remix and tweak the work as long as you give credit to the creator.



The **No Derivative Works** licence means that you can share, copy, redistribute and display the work as long as you do not change it or create derivative works.



The **Share Alike** licence means that you can share, copy, redistribute, display, perform, remix and tweak the work as long as you keep the same licence when you share the resource yourself.



The **Non Commercial** licence means that you can share, copy, redistribute, display, perform, remix and tweak the work as long as you do not use this work for commercial purposes.

These licences (represented by four symbols) offer the student more flexibility to share, copy, redistribute and display work than copyright law normally allows. The four terms can be mixed in different combinations. These combinations then define the way in which others may freely and legally share, modify or build upon a copyrighted work.

Table 2 Creative Commons Licences¹⁴

Licence Name	Acronym	Icon	Description
Attribution	ВУ	CCC BY	This licence lets others distribute, remix, tweak and build upon your work, even commercially, as long as they credit you for the original creation. This is the most accommodating of licences offered, in terms of what others can do with your works licensed under Attribution.
Attribution Share Alike	BY-SA	BY SA	This licence lets others remix, tweak and build upon your work even for commercial reasons, as long as they credit you and license their new creations under the identical terms. This licence is often compared to open source software licences. All new works based on yours will carry the same licence, so any derivatives will also allow commercial use.

Licence Name	Acronym	Icon	Description
Attribution No Derivatives	BY-ND	CC PY ND	This licence allows for redistribution, commercial and non-commercial, with credit to the author. The work may not be altered, transformed or built on.
Attribution Non- Commercial	BY-NC	BY NC	This licence lets others remix, tweak and build upon your work noncommercially, and although their new works must also acknowledge you and be non-commercial, they don't have to license their derivative works on the same terms.
Attribution Non- Commercial- Share Alike	BY-NC-SA	BY NC SA	This licence lets others remix, tweak and build upon your work noncommercially, as long as they credit you and license their new creations under the identical terms. Others can download and redistribute your work just like the BY-NC-ND licence, but they can also translate, make remixes and produce new stories based on your work. All new work based on yours will carry the same licence, so any derivatives will also be non-commercial in nature.

Licence Name	Acronym	Icon	Description
Attribution Non- Commercial- No Derivatives	BY-NC- ND	BY NC ND	This licence is the most restrictive of the six main CC licences, allowing redistribution only. This licence is often called the "free advertising" licence because it allows others to download your works and share them with others as long as they mention you and link back to you, but they cannot change them in any way or use them commercially.

Top tips

- Creative Commons licences are not the only way to signify that a
 work is an OER, but they are by far the most widely used. If you are
 in doubt, you can look for a "Licensing" or "Permissions" section of
 the website where you found the work for more details on whether
 or not a work is an OER.¹⁵
- When you decide to use a CC-licensed work, read the licence carefully so you know what you can do with the resource before you get started. For example, some licences allow for adaptations while others do not. Some licences allow you to share your work for commercial purposes, others for non-commercial uses only.
- The CC-BY option is the most open combination and offers users the most flexibility.
- Remember that the absence of a copyright symbol does not mean that the work is openly licensed. Since everything is automatically copyrighted, you should generally assume that any work with no clear licence is copyrighted, and should not treat it as an open resource without further investigation.¹⁶

5.2 How do I find relevant OER?

Anyone can create an OER and share it online, so the field of resources available online is constantly growing. One problem with this growth is that there is no single comprehensive listing of all OER. Some helpful places to start when you are searching for OER are:

- Google Advanced Search (https://www.google.com/advanced_search) allows you to search for CC material by keyword and refine your results to show only material available under certain CC licences.
- CC Search (https://search.creativecommons.org) offers convenient access to search services provided by other independent organisations. It is designed and hosted by Creative Commons and offers image, media, video, music and Web content search tools.
- OER Commons (https://www.oercommons.org) is a network
 of shared teaching and learning materials made freely available
 online. OER Commons can be used to find free-to-use teaching
 and learning content from around the world.
- Flickr (https://www.flickr.com). Many Flickr users have chosen to offer their work under a Creative Commons licence, and you can browse or search through content under each type of licence.
- Open Courseware Consortium (www.oeconsortium.org/courses/ search) allows users to search for courses.

Appendix B has a list of other websites where you can find OER.

Once you have found a website that works for you, you may still have to search quite thoroughly through the site to find what you are looking for. You need information literacy skills in order to use OER. This video is a good introduction to techniques and search tools that you can use to help you to make wise choices: https://youtu.be/EV4K-V2cHYk?list=PLwqwK07J4Hqwhg-_qB4pwJw5XxIeqBqB7.

Let's look at an example of how to find OER. The following scenario examines one way of trying to find an open image.

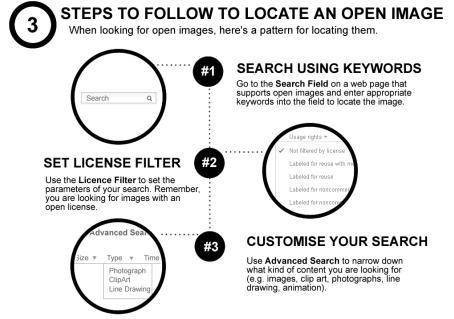
Scenario: How do I find images to use in a class presentation?

You could pay a stock photo service (but that could be expensive), or you could get out your camera and start snapping, or you could look for an OER image. There are many image resources available to locate OER images that are both legal and free for use. You could, for example, use:

- Google Images (https://images.google.com),
- Wikimedia Commons (https://commons.wikimedia.org¹⁷ or
- Flickr (https://www.flickr.com).

You can follow some basic steps to find an open image in each of the above locations.

Figure 1 Suggested steps to locate an open image



When searching for images, you can locate an open image that is appropriately licensed (for example, an image with a CC licence or an image in the public domain) at a range of sites. Here are the basic steps you can follow to locate an open image.

- Step 1: Go to a search field on a Web page that stores or indexes open images and enter appropriate keywords into the search field to locate the image.
- Step 2: Use the *Licence Filter* to set the parameters of your search. Remember, you are looking for images with an open licence.
- Step 3: Used Advanced Search to narrow down what kind of content you are looking for (images, photographs, video, audio, text).
- Step 4: Click "search" and then check your results. If they are satisfactory, then move ahead
 - to Step 5. Otherwise, go back and modify your approach. Try a different website or alternative keywords.
- Step 5: Confirm the licence by clicking on the image and looking for the licence agreement. NOTE: Creative Commons offers licences with various degrees of openness. We recommend, where possible, looking for materials published with the most open licence: CC BY. This offers others who might want to use the OER in the future more flexibility if they wish to remix it.

Glossary:

- Search Field:
 rectangular textbox
 on a screen into
 which a user can type
 text. Once this text is
 submitted, related links
 and resources can be
 found.
- Keywords: a common word or phrase that is frequently used to describe information. Keywords are often used when searching online.
- Advanced Search: a facility that allows you to narrow your search criteria and locate specific information
- Licence Filter: a search facility that allows you to determine what kind of licensed items you want to include in the search results.

- Step 6: Evaluate the suitability of the image and the licence. If it is suitable, save the image and licence information.
- Step 7: Consider if you want to alter the image to better fit your particular needs. For example, you may want to crop a photograph or join certain images together (see "How to remix an OER").
- Step 8: When using your new OER image, remember to include the licence details before you publish or share the work.

Now that you have found the OER you want, you may decide that you want to use it and change it. If you use an OER, you need to cite the source in your work.

5.3 How do I cite OER?

Having found a resource that you want to use in your assignment or project, you now need to think about how to cite it. You cannot use something without crediting its source (as you would any resource that you use in your work) just because it is an OER. As a student, one of the first things you are taught to do is to cite and reference all the works you consult when completing an assignment or research task. Not citing sources is plagiarism. However, if you are careful to cite your sources, it is not difficult to avoid plagiarism.

An important piece of OER etiquette

Be sure to attribute the work to the original creator when you use it. For example, if you are using a CC-licensed image in a presentation, check to see who created it and include it in a note with the image in your presentation.¹⁸

Citing simply means acknowledging the source of information that you used during your research. Sources can include a book, article, government document, website, interviews, etc.²⁰ It is how you inform people where you found a resource if you have referred to it in a research article or piece of work. ²¹ Certain basic information about the source must be included in the citation: the author, year of publication, and page number or page range. Citing usually occurs in the text of your work, and a

complete list of citations is included at the end of your work as a set of references. There are different formats for citing and referencing, so use

Plagiarism is presenting someone else's work as your own. It can include copying and pasting text from a website into a project that you are working on or taking an idea from an article or book without including a citation to give credit to the author of the article or book.¹⁹

the format style that is required by your institution or department. EasyBib (www.easybib.com/ reference) provides a useful guide on how to cite accurately, using different formal styles, and the University of Western Australia provides an excellent detailed guide on how to cite and reference your work (see http://guides.is.uwa.edu. au/c.php?g=324809&p=2177833). There are also many free tools available online that you can use to

help you cite and reference your work. See, for example, https://www.refme.com and https://www.citethisforme.com.

OER are cited in the same way as any other information source, with the exception of noting the licence (if a CC licence was used for the work).

5.4 How do I remix an OER?

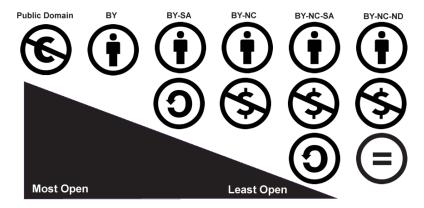
When someone takes another person's audio, video, text or data and adapts, reorganises and repurposes it for their own needs, they are "remixing" it. Some OER are much easier to remix or adapt than others. Text files are simple to edit, but other resources, like images, textbooks and videos, are more challenging to adapt. The benefit of remixing is that it allows resources to be changed and localised to meet the unique needs of different students. Remixing is also about a sharing mindset. It is about passing on a creative spirit to others when you publish your video or article. By letting others reuse and remix your files for their projects, you enable them to play with your work and you invite them in to a global learning laboratory. Adapting and repurposing OER requires some skill. Remember to:

- 1. determine the licensing of the resource, and
- 2. work with tools and formats that allow you to keep the work as "open" as possible.

Determine the licensing

Determining the licence of your end product is important as it will guide you in selecting resources with appropriate licences that allow you to adapt content and share the adapted resource in a suitable manner. In selecting the appropriate licence, you need to determine how open the new resource's licence should be. Generally, the less restrictive the licence, the more useful the resource can potentially be for other students. The following figure may be helpful for understanding the various degrees of openness of the different CC licences.

Figure 2 Degrees of openness²²



Select appropriate formats and tools

We noted earlier that OER can include slides, handouts, videos, etc. There are different ICT tools for developing these different OER (for example, developing text documents requires the use of different tools from those used to develop images or videos). Thus, before selecting your tool, you also need to determine what format your remixed OER will be in: a document, presentation, video or some other suitable format. Open Professional Collaboration for Innovation has developed an excellent resource outlining the ICT tools required to develop and adapt different types of OER. See http://openprof.eu/training-material/ICT_tools_to_develop_and_adapt_OER for more information.

It is important to note that file format matters, especially during OER production. Whatever the resource, if it is not in a suitable format,

other students might not be able to use it. If you want others to be able to remix and reuse the resource you created, you need to make sure that the file format that you have chosen to save the work in is open and editable. When the file formats are kept open, the OER will not be inadvertently "locked up."

For example, when using images, it is a good idea to use open source software. Or when you are saving your images, ensure that you save them as a TIFF or PNG, as these

formats are more conducive to editing.²³

What is the difference between plagiarism and remixing?

Plagiarism is passing off someone else's work as your own. With remixing, you are adapting someone else's work AND you are crediting them through attribution as specified by the licence holder.

How to apply a Creative Commons licence to your remix

Once you have adapted or remixed a resource, you then need to license your work. There is no registration required to license your work. All you need to do is select an appropriate CC licence and then display the licence information on your work.

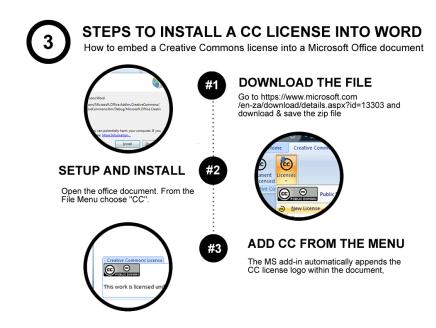
If you would like to choose a CC licence for your remix (or any of your original work that you want to release as an OER), go to http:// creativecommons.org/choose and follow the easy steps listed there. The licence tool will help you to work out the most appropriate licence for you. The generator provides licence information and appropriate licence graphics that can be pasted into any electronic document — or, alternatively, HTML code that can be embedded into your website or document.

You can add a note to your resource about how you wish to be attributed.²⁴ You can include the following information:

- The name of the author (this may be different from the copyright holder), the year and the title of the resource.
- The name of the copyright holder.
- CC licence name with a link to the appropriate licence text.
- CC logo.

How to use the CC Add-In for Microsoft Office

If you use Microsoft Office and you want to create an OER, you might want to install the Creative Commons Add-in for Office. This extension to MS Office enables authors and editors to embed Creative Commons licences directly into Microsoft Word, PowerPoint and Excel documents.



- Step 1: Go to https://www.microsoft.com/en-za/download/details. aspx?id=13303 and download and save the zip file. Open the zip file and double-click the Creative Commons Office AddIns.exe to start the setup programme.
- Step 2: Open the office document and from the File menu choose "Creative Commons" to specify that your document may be modified, reused and republished.
- Step 3: The add-in automatically appends the CC licence logo with a link to your terms.

The CC add-in for Microsoft office allows a student to express their intentions regarding how their works may be used by others. It allows the student to easily select a licence, download it from the Creative Commons website and insert it directly into the working document.

Attribute your sources

Attribution is about crediting a copyright holder according to the terms of a copyright licence, usually crediting artistic works like music, fiction, video and photography.²⁵

Creative Commons highlights some best practices for attribution, combined under the acronym (TASL), which stands for Title, Author, Source, Licence.

- Title: include the title or name of the material (article, picture, song) if it is provided.
- Author: name the author(s).
 In some instances, the licensor may request you give credit to another entity, like an organisation or company, so attribute the work in the manner specified by the author or licensor.
- Source: provide the source of the material (usually a URL or hyperlink) so that others can find the original material.
- Licence: mention the specific licence of the material.

 Remember, there are six different CC licences. It is not sufficient to just state that the material is Creative Commons as this does not specify how the material can be used.

 Name and provide a link to the licence for example, http://creativecommons.org/licenses/by/4.0 for CC BY.²⁶

You should also try to cite these works in such a way that it is clear which portions of content the attribution refers to, so that the

Imagine hearing an audio track that you composed included within a departmental documentary or seeing your phone footage about a campus event used by a journalism student in the student newspaper or finding your research results about public policy visually represented in a research infographic at a public lecture. If this audio, picture or data were properly credited, you would be pleased because your work is being acknowledged and shared. However, if you discovered that your music, photo or data were incorporated without any acknowledgement, you would probably be disappointed — not because you expected any remuneration, but because it is good etiquette and ethical to acknowledge another person's contribution.

attribution is prominent. For example, if you include a CC BY image in an assignment, the attribution should be included as a caption under the image. When such attribution is not possible, including attributions in a works cited page is acceptable if it is clear which content each reference belongs to (for example, by providing page numbers).²⁷

Figure 3 Example of how to attribute your image



Short form:

"Mr Blobby" (c) by Weblearning is licensed under CC BY-SA

Long form:

"Mr Blobby" (c) by webleaming is licensed under Creative Commons Attribution-ShareAlike

What is the difference between citation and attribution?

Attribution is about giving credit to the copyright holder of the image, video or idea according to the terms of a copyright licence. Citation, on the other hand, is a scholarly practice used to identify the ideological underpinnings of a work.²⁸ It provides a path back to the originator of an idea and it separates researched information from original content.²⁹ In academic work, a citation is often required instead of, or in addition to, the attribution.

Distribute your work

Before you distribute your work, make sure that all elements of your remix are appropriately licensed and referenced. You may, for example, wish to distribute your work on a personal website, university platform or other sites like Vimeo (https://vimeo.com), YouTube (https://www.youtube.com) or WordPress (https://wordpress.com).

Summary: Scenario

You have been asked in class to create an advert about a topic you are studying and to post it onto YouTube. You are thinking of "borrowing" an audio track from your favourite band and then mixing it with your own video footage. This remixed track and footage would be the jumping-off point for your advert. What do you do?

- 1. Check the licence of the work to determine whether you are allowed to remix the audio track. If there is a copyright licence or no specified licence, you cannot use the audio track. If it is openly licensed, move to step 2.
- 2. Select the format for your work and ensure that you use an open format if you would also like others to reuse your video.
- 3. License your work using an appropriate licence (keeping in mind the licensing conditions of the audio track).
- 4. Attribute the audio track in your list of credits on the video.
- 5. Upload your video onto YouTube and share it with the world!

5.5 How do I use open access for research and publications?

Open access (OA) publishing generally refers to research publications of some kind released under an open licence. Generally, OA refers to research articles that are freely and openly available to the public for reading, reviewing, and making and distributing derivative works. OA literature is digital, online, free of charge and free of most copyright and licensing restrictions. There is some overlap between OER and OA, especially in higher education as research publications form an important part of the overall set of materials that students need to access to complete their studies successfully, particularly at postgraduate level. In the control of the overall set of materials that students need to access to complete their studies successfully, particularly at postgraduate level.

Rising journal prices over the last decade mean that many universities, particularly those in developing countries, can no longer afford subscription costs, which reduces their access to up-to-date research.³² OA is regarded by many people as a solution to this challenge. OA journals are thus an important resource for students conducting literature searches to inform their research.

There are two primary and complementary ways in which students can use open access for their research and publications:

- Self-archiving: Students can make their articles freely available in digital form on the Internet, a practice known as "self-archiving." OA archives or repositories do not perform peer review, but simply make their contents freely available to the world. These archives may contain un-refereed pre-prints, refereed post-prints or both. Self-archiving can be done on authors' personal websites, disciplinary archives, institutional-unit (departmental or faculty) archives and/or on institutional repositories.
- 2. Open access journals: Another way of providing OA is to publish in an OA journal. Authors who publish an article in an open access journal retain copyright of their work, and the articles are available free of charge for all readers immediately upon publication. Additionally, the articles are archived in public repositories, which guarantees authors worldwide visibility and impact. Many OA journals use an "author pays" business model, whereby authors have to pay the publication costs upfront to make the article available to readers worldwide.³⁵ 36

Thus, for students conducting or accessing research, the growth of OA journals is a promising development. The Directory of Open Access Journals (DOAJ) (www.doaj.org) lists all open access scientific and scholarly journals that use a quality control system to guarantee the quality of content. Similarly, BioMedCentral (www. biomedcentral.com) is a publisher of 290 peer-reviewed OA journals. The availability of open access publications means that students and academics have the opportunity to disseminate their research quickly, with worldwide coverage, allowing them recognition as their papers are read and cited by others. In addition, they have quick, free access to articles of interest.

6 Conclusion

OER availability and use are growing increasingly as users realise the benefits of OER, which can improve your own learning and help education become more accessible to all. By getting involved in using and remixing OER, you too can contribute to making resources more available and join a team of worldwide collaborators. We hope that this guide has whetted your appetite for the possibilities that OER can open up and provided you with the tools you need to begin using them.



Appendix A: Examples of OER use by institutions/universities

OER initiatives aspire to provide open access to high-quality education resources on a global scale. From large institution-based or institution-supported initiatives to numerous small-scale activities, the number of OER-related programmes and projects has been growing quickly within the past few years.

Initiative	URL	Description
A Guide for Understanding, Finding, Creating, and Using Open Educational Resources (OERs) at Montgomery College	http://cms. montgomerycollege. edu/WorkArea/DAsset. aspx?id=73375	This document was developed as a resource for Montgomery College faculty and staff who want to locate or develop OER.
OER University	http://oeru.org	Allows students to take university-level courses online for free and submit assessments when they are ready to have their learning recognised for formal academic credit.
The University of Cape Town's OpenContent directory	http://opencontent. uct.ac.za	An open access institutional repository of the University of Cape Town (UCT), Open UCT makes available and digitally preserves the scholarly outputs produced at UCT, including theses and dissertations, journal articles, book chapters, technical and research reports, and open educational resources. These resources are organised into collections that are mapped against the university's organisational structure.

Initiative	URL	Description
OTTER (Open, Transferable & Technology-enabled Educational Resources)	www2.le.ac.uk/ departments/beyond- distance-research- alliance/projects/ otter?uol_r=22c0d72e	The OTTER project created a collection of OER in the areas of Archaeology and Ancient History, Education, Law, Politics and International Relationships, Psychology, Staff Development Service, and Student Support and Development Service at the University of Leicester, in collaboration with Beyond Distance Research Alliance.
The Lilongwe University of Agriculture and Natural Resources, Bunda campus (previously known as the Bunda College of Agriculture): OER project to develop a textbook on Communication Skills.	www.oerafrica.org/ ResourceResults/ tabid/1562/mctl/ Details/id/38573/ Default.aspx	Staff at the Language and Communication for Development Department compiled OER to counteract the lack of textbooks for a first year Communication Skills course.
Broward College Online Case Study – Diving into Open Educational Resources	www.oeconsortium. org/projects/ showcases/oer-at- broward-college- online/	Broward College Online is moving towards creating no-textbook and no-cost solutions for their master courses.
Kwame Nkrumah University of Science and Technology (KNUST) College of Health Sciences (CHS): OER initiative supporting the production and use of OER	http://web.knust.edu. gh/oer	Fostered the creation of a dozen comprehensive, interactive OER modules. KNUST distributes OER electronically, either online or via CD-ROM, which enables the students to access the materials on a computer at their convenience.

Initiative	URL	Description
Moving to Open Educational Resources at Athabasca University: A case study	www.irrodl. org/index.php/ irrodl/article/ download/1534/2512	This case study highlights the steps Athabasca University has taken to explore the potential of using OER in course design and production.
Unisa Open	www.unisa.ac.za/ Default.asp?Cmd=Vi ewContent&Content ID=27721	Unisa-Open is a portal aimed at assisting students, staff and other users to source high-quality OER. It also showcases the OER work being conducted at Unisa.
Writing Wikipedia Articles as a Classroom Assignment	https://www.ssc. wisc.edu/~wright/ ASA/Writing%20 Wikipedia%20 Articles%20as%20 a%20Classroom%20 Assignment.pdf	This article discusses the experience of writing Wikipedia articles as part of a classroom assignment.



Appendix B: OER repositories and links for students in Post-Secondary Higher Education

Since anyone can create an OER and share it online, the field of resources available is constantly growing. This appendix provides a sample of the open resources that are currently available.

Open Textbooks

Initiative	URL	Description
OpenStax College	https:// openstaxcollege.org/ books	OpenStax College offers students free textbooks that meet scope and sequence requirements for most courses. They are peer-reviewed texts written by professional content developers.
College Open Textbooks	www. collegeopentextbooks.org	College Open Textbooks provides a listing of open textbooks by subject, peer reviews and accessibility reviews of open textbooks.
Open Culture	www.openculture.com/ free_textbooks	Open Culture offers a collection of 200 textbooks covering various subject areas.
Open Textbook Library	https://open.umn.edu/ opentextbooks	Open Textbook Library is a collection of free, peer-reviewed and openly-licensed textbooks for university students.

Initiative	URL	Description
Global Textbook Project (GTP)	http://globaltext.terry. uga.edu	The Global Text Project (GTP) intends to create, translate and distribute free open content textbooks. Their focus is on university students mainly in developing countries, where textbooks are often expensive and so not affordable to many students.
Wikibooks	https://en.wikibooks.org/ wiki/Main_Page	Wikibooks provides an open content textbook collection that anyone can edit.
Textbook Revolution	http://textbookrevolution. org	This website contains links to a number of freely available (mostly undergraduate) textbooks.
Washington 45	www.openwa.org/ washington-45	Washington 45 are courses at a public community, technical, four-year college or university in Washington state. The website provides a list of open textbooks and course materials that are available for a number of courses.
BC Campus	https://open.bccampus. ca/find-open-textbooks	The goal of this project is to make higher education more accessible by reducing student costs through the use of openly licensed textbooks. They provide over 130 textbooks across various subject areas.



OpenCourseWare

Institution	URL	Description
OpenLearn	http:// openlearn.open.ac.uk	The OpenLearn website gives free access to Open University course materials. Users can find hundreds of free study units across various topic areas.
UCT Open Content	http:// opencontent.uct.ac.za	This website allows users to access open teaching and learning content from the University of Cape Town (UCT).
Tufts Open- CourseWare	http://ocw.tufts.edu	This website publishes Tufts course materials, does not require any registration, does not grant credit, degrees, or certificates, and does not provide access to Tufts faculty. However, feedback is shared.
Stanford University School of Engineering	http://see.stanford.edu	Allows users to view complete lecture videos via streaming or downloaded media — anytime, anywhere — on a PC, Mac or mobile device. Users can access full course materials including syllabi, handouts, homework and exams.
University of Leicester OER Repository	www2.le.ac.uk/projects/ oer	Allows users to use OER across a number of different subject areas.
John Hopkins School of Public Health Open Courseware	http://ocw.jhsph.edu	Provides a collection of public health resources from the university's Bloomberg School of Public Health.

Institution	URL	Description
MIT Open Courseware	http:// ocw.mit.edu/index.htm	A repository of MIT course materials collected over many years. It includes course schedules, lecture notes/texts, tests and solutions, and student work exemplars from a wide range of courses.
Open University: OpenLearn	www.open.edu/openlearn	A repository of short courses for a range for post-secondary study options, written originally for distance education students.
Open Yale courses	http://oyc.yale.edu	Open Yale Courses provides free and open access to a selection of introductory courses taught by teachers and scholars at Yale University.
Open Learning Initiative	http://oli.cmu.edu	OLI offers innovative online courses to anyone who wants to learn or teach. They aim to create high-quality courses and contribute original research to improve learning and transform higher education.
Harvard Open Courses	https://www.extension. harvard.edu/open- learning-initiative	Harvard Open Courses is a series of free or low-cost courses.
OCW Consortium	www.oeconsortium.org	The OCW is a global network of educational institutions, individuals and organisations that support an approach to education based on openness, including collaboration, innovation and collective development and use of open educational materials.

Institution	URL	Description
The Multimedia Educational Resource for Learning and Teaching Online (MERLOT)	https://www.merlot.org/ merlot/index.htm	Provides free and open resources designed primarily for faculty and students of higher education. MERLOT allows users to find peerreviewed online teaching and learning materials, and share advice and expertise about education with expert colleagues.
Open. Michigan	http://open.umich.edu	A repository of materials from a range of university courses, covering many subjects.
NOW Nottingham	http:// unow.nottingham.ac.uk	A collection of university courses covering many subjects from the University of Nottingham, UK.
Saylor Academy	http://www.saylor.org	A collection of predominately post- secondary short courses across a wide range of subjects.
DelftX	www.delftx.tudelft.nl/en	TU Delft was the first edX partner to issue its courses under a Creative Commons licence. While most MOOCs are open to everyone, the majority apply copyright to their materials. DelftX is the exception.

Video Resources

Initiative	URL	Description
Khan Academy	https://www. khanacademy.org	A repository of predominately secondary and post-secondary instructional science and mathematics videos, it also has resources for computer programming, art and economics.
TED Talks	www.ted.com	TED is a nonprofit devoted to spreading ideas, usually in the form of short, powerful talks (18 minutes or less). These videos are released under a Creative Commons BY-NC-ND licence, so they can be freely shared and reposted.

OER Directories and Repositories

Initiative	URL	Description
COL OER Directory	http://doer.col.org	COL's directory identifies quality OER in the fields of higher education, open schooling, teacher education and technical and vocational skills development (TVSD).
OER Commons	https://www. oercommons.org	OER Commons identifies education subjects ranging from preschool to adult education to graduate levels. Its directory listings are particularly strong in the K-12 area.
OER Africa	www.oerafrica.org	The OER Africa website aims to be the primary place to find African-produced OER.

Initiative	URL	Description
JORUM	www.jorum.ac.uk	A free online repository service for teaching and support staff in further and higher education institutions in the UK.
PanOpen	https:// panopen.panopen.com	PanOpen is a platform that enables mainstream institutional adoption of OER. It provides academics with high-quality peer-reviewed content, tools for customisation, assessment and analytics.
OAsis	http://oasis.col.org	All COL publications are available here with open license.

Open Access Journals

Initiative	URL	Description
Directory of Open Access Journals	https://doaj.org	This is a general directory that identifies Open Access research articles in a broad range of subjects.
Public Library of Science	https://www.plos.org	PLoS specialises in identifying scientific research journal articles.
BioMedCentral	www.biomedcentral.com	BioMedCentral is a publisher of 290 peer-reviewed Open Access journals.
Wiley Open Access	www.wileyopenaccess. com/view/index.html	Wiley Open Access is a programme of fully Open Access journals. All research articles published in Wiley Open Access journals are immediately freely available to read, download and share.

Open Images

Initiative	URL	Description
Creativity103.com	http://creativity103.com/ index.htm	Cr103 is a library of free abstract backgrounds, textures and design ideas. You can cut and paste them into your own work or use them just for inspiration.
Flickr	https://www.flickr.com/ search	An online photo management and sharing application.
Openclipart	https://openclipart.org	Releases all the clipart in the public domain, which means that you can use the clipart in whatever way you wish to.
Photopin	http://photopin.com	Allows users to search and use millions of Creative Commons photos.
Wikimedia Commons	https://commons. wikimedia.org/wiki/ Main_Page	Provides a database of freely usable media files to which anyone can contribute.

Content Creation Initiatives

Initiative	URL	Description
Curriki	www.curriki.org	A website where the community shares and collaborates on free and open source curricula. Curriki is a community of educators, students and committed education experts who are working together to create quality materials that will benefit teachers and students around the world. It is an online environment created to support the development and free distribution of world-class educational materials to anyone who needs them.
OpenStax CNX	www.cnx.org	Previously known as Connexions, OpenStax CNX hosts open learning objects available for mixing and matching into study units or full courses. The site allows users to view and share educational material made of small knowledge chunks called modules that can be organised as courses, books, reports, and so on. Anyone may view or contribute.
Wikipedia	https://wikipedia.org	This well-known online encyclopaedia is in reality a platform for collaborative writing. The entries have been written and peer-reviewed by members of the public. All entries are licensed as CC BY-SA.

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