2 Evaluating the licensing and quality of online resources

So, how best to know what material is available for use and what isn’t? In this section we will look at some of the ways of deciding what you should use.

2.1 Copyright and the role for Creative Commons licences

When a piece of creative work like an image, video, or textbook is produced, the creator of the work may have certain legal rights that restrict the ability of others to use or reuse that material without seeking permission from the author. This is known as copyright, and it applies automatically to all works unless the author chooses otherwise. The copyright notice © is a familiar symbol online. However, it is not necessarily helpful in determining whether or not you can use a resource, as sometimes copyrights expire, and in some cases it is no longer necessary to use it – in the USA, for example, the symbol is no longer required for works published after March 1989. Absence of notice does not necessarily mean the work is within the public domain – on the contrary, copyright must be assumed to be in place unless stated otherwise. Intellectual property is a broader term that incorporates copyright and other elements like patents. This is where Creative Commons licensing has filled a potentially very confusing gap.

Activity 2 Interpreting Creative Commons licences
Allow about 20 minutes

Figure 4 Creative Commons logos
This video ‘Creative Commons Kiwi’ explains the four different symbols you may find on a Creative Commons licence, and the six possible combinations of these. This page also provides explanations of each of the licences if you want to use a text version. Make your own notes on the four symbols and six combinations, so that you will be able to refer to them in the future to identify what you are permitted to do with shared resources you find online.

Provide your answer...

Comment
Creative Commons licences are an essential part of sharing or reusing teaching resources online. You need to be able to identify at a glance the reuse conditions attached to any learning object, and you should of course apply licences to any work you share more widely, too.

Now, thanks to Creative Commons licences, when you find materials on the web that you would like to use in your online teaching, you will be quickly able to tell whether you can reuse the item, whether you can modify it, whether you can use it to make money, and whether you need to apply an identical licence onto your own resulting work.

### 2.2 Evaluating open resources

![Figure 5 Do the materials fit the bill?](image)

The next consideration you need to make regarding materials you have found on the web is to evaluate the quality and relevance of the material.
In many cases, OER are as rigorous in their production as any other educational resource. They may be shared by some of the best educators in the field, or they may have been the product of collaboration or feedback from educators worldwide. But there are, as yet, no common standards or guidelines for assessing the quality or accuracy of OERs. A recent EU report concluded that, as yet, there are few national policies or guidelines concerning the validation or certification of OER (Cedefop, 2016), let alone multinational or global standards.

The first step in this process is to use your subject knowledge to check the accuracy of knowledge claims made in the resource. In academic papers, for example, knowledge claims are often found in a distinct ‘Findings’ section, and may be repeated in the conclusion of a report. Are any items presented as facts, to the best of your knowledge, true? Are attributions made to the kinds of experts whose names you would associate with that field of work? Supporting evidence should usually accompany each knowledge claim – a knowledge claim should be backed up with a response that can be used to answer the question ‘How do we know that?’

In addition to checking the resource for its factual accuracy, you should also check for accessibility. We will look at this in more detail next week, but for now, it suffices to say that any OERs that you choose to use will need to be suitable for all of your learners (both current and future learners) and whatever needs they may have. If the resource has not been made accessibly, it must come with a CC licence that enables you to modify it, so that you can add accessibility features. If the licence says no editing is allowed, then if it is not accessible, it’s probably not going to be useful to you.

It could also be important to evaluate how the form and content of a resource fits with the rest of the teaching. For example, an OER in the form of a web-based short course could be combined with a weekly class to create an opportunity for blended learning. Equally, an OER might use different terminology or introduce different concepts to the student from an existing core text. It could be important to be aware of this and respond in order to ensure a good experience for the learners.

The ability to modify resources, or combine them together with others, is central to OER, so this is often supported by the licences used. However, it could take substantial time and effort to make modifications in order that an existing OER becomes appropriate to a new teaching use. These revisions may include removing any inappropriate content, or creating additional content to introduce or add more detail to the existing resource (Coughlan, Pitt, & McAndrew, 2013). Therefore, another aspect of evaluating OER is to think about whether it's useful as is, which is an ideal situation, or whether it will need revisions, and if so, how those will be achieved.
2.3 Licensing your own materials

The other side of the OER story is to consider sharing some of your own online teaching materials for others to reuse. For some people there are restrictions preventing this – your employer may hold the intellectual property rights to everything you produce and may not permit learning materials to be shared in this way, or it may even be illegal in your country to upload to sites like YouTube. However, it can still be a valuable learning experience to follow the procedure of adding a Creative Commons licence to an item of yours, even if you just use a blank image to practise the process.

The Creative Commons website makes the process as simple as possible. You simply respond to the questions about whether you want to permit others to adapt or potentially profit from your work, and your licence is automatically generated. If you can, open the ‘Help others attribute you!’ section, which adds metadata to your item, telling other users your name, the title and date of the work, and so on. If you wish to apply the licence to a web page, the site provides code that you can copy and paste, otherwise simply right-click on the image of the CC licence the site has generated, and save it to your computer, uploading it alongside your work in whatever location you have made it available.

If you share your resources for reuse, you may wish to ensure you are always attributed as the original author for the purpose of expanding your profile as an online teacher, or as a means of expanding your networks (as you learned in Week 4 of this course). You may even find ways of collaborating with others to refine your works, or to discuss your teaching resources as part of the sharing community.

Figure 6 Sharing your materials is an important part of OER
3 Finding resources online

There are millions of OERs to be found across the web. For an individual teacher the task of finding them would be exceptionally laborious if it were not for the advent of OER repositories. These can contain the output of one project or several projects gathered together, one institution’s OERs, or a gathering of many. For example, the OpenLearn site gathers all of the OU’s open education material.

3.1 OER repositories

There are many repositories of OERs publicly available on the internet. A large proportion of these showcase OERs associated with particular educational institutions or projects, but there are several repositories which aggregate material from a range of sources. Here is a list of some of them – an internet search for ‘OER repositories’ will reveal more.

- **Solvonauts** – a search engine that searches across repositories (they also provide open repository software for institutions wanting to set up their own repository of OER).
- **MERLOT** – tens of thousands of discipline-specific learning materials, learning exercises, and content builder webpages, together with associated comments, and bookmark collections, all intended to enhance the teaching experience of using a learning material. All of these items have been contributed by the MERLOT member community, who have either authored the materials themselves, or who have discovered the materials, found them useful, and wished to share their enthusiasm for the materials with others in the teaching and learning community.
- **MIT OpenCourseWare** – a web-based publication of virtually all MIT course content. OpenCourseWare (OCW) is open and available to the world and is a permanent MIT activity.
- **OpenLearn** – a repository of open materials produced by The Open University, who also work with other organisations by providing free courses and resources that support their mission of opening up educational opportunities to more people in more places.
• **OpenStax** – tens of thousands of learning objects, organised into thousands of textbook-style books in a host of disciplines, all easily accessible online and downloadable (note: this resource was formerly known as Rice Connexions).

• **Saylor** – nearly 100 full-length courses at the college and professional levels, each of which is available right now – at your pace, on your schedule, and free of cost.

• **AMSER: Applied Math and Science Education Repository** – a portal of educational resources and services built specifically for use by those in Community and Technical Colleges, but free for anyone to use.

• **Internet Archive** – a library that contains hundreds of free courses, video lectures, and supplemental materials from universities in the United States and China.

• **OER Commons** – free-to-use learning and teaching content from around the world.

• **Open Course Library** – a collection of shareable course materials, including syllabi, course activities, readings, and assessments designed by teams of college faculty, instructional designers, librarians, and other experts.

### Google Image Search

Within the settings on a Google Image Search results page, you can search for images that have been labelled for reuse. First perform your search, and when your results page shows, click on the Tools drop-down. This brings up a new toolbar of options, one of which is ‘Usage rights’ - if you click on this you can select either ‘Labelled for reuse’ or ‘Labelled for reuse with modification’ according to your preferences. (You can also select images according to size, colour and time of publication, if you wish). Your results window should refresh. Now, in theory, the images showing should be reusable. However, this does not mean that you can simply copy and paste without attribution. When you find an image in your Google results that you would like to use, click on it, and a black bar will appear, featuring the option to visit the originating site. Click this link – hopefully the hosting site will make clear what reuse licensing options apply to the image. If it does not, then you should not use that image, as simply attributing it may not be sufficient to protect you from breach of copyright.

### YouTube

Beneath every video on YouTube is a ‘Show More’ link. When clicked, the licence attached to the video is revealed. Some videos have a Creative Commons licence attached (this is an option the uploader can select when putting their video onto YouTube). However, most have the default Standard YouTube Licence, which says you ‘shall not copy, reproduce, distribute, transmit, broadcast, display, sell, license, or otherwise exploit any Content for any other purposes without the prior written consent of YouTube or the respective licensors of the Content’. So if you wish to reuse Youtube videos that have the Standard YouTube Licence, your only course of action is to attempt to contact the uploader to gain permission.

YouTube does provide a setting to filter your search results to only show videos bearing a CC licence. First perform a search for videos on the theme of your choice, then select the ‘Filter’ option. Under the heading ‘Features’ there is the option ‘Creative Commons’, which reduces your results list to only videos that have a CC licence attached.
Vimeo

Beneath every video on Vimeo is a ‘More’ link. If the uploader has attached a licence to their video, the type of licence that applies will be listed here. If no licence is stated, you must assume that the work cannot be reused without express permission from the uploader, and you should try to contact them if you wish to reuse the material. You can narrow down a search within the Vimeo site to show only CC-licenced videos. First perform your search using the main search box. When you have a results page, under ‘Refine By’ in the left hand column, click ‘More’. Scrolling down should reveal a Licence section where you can filter your search results according to which CC licences apply to your planned usage of the video.

Flickr

Flickr makes it very clear which images you can reuse and which you cannot. When you perform a search in the Flickr website, the most prominent drop-down filter option on the results page is ‘Any License’ which, by means of a drop-down menu, can be changed to filter results for a variety of Creative Commons options. Every image on Flickr has beneath it either a © symbol or a CC symbol, and clicking this will bring up the precise terms of use for that image.

If you wish to keep in touch with developments regarding OER and become part of the community, sign up for the OpenLearn newsletter. Several courses are available from The Open University that go into greater detail about this area. More information on these courses will be provided in the course conclusion at the end of Week 8.

Activity 3 Using OER repositories

Allow about 20 minutes

Pick a topic of interest to you and spend some time searching for resources on this. Try to make use of both an OER repository from the bulleted list at the top of this page, as well as one of the other sites explored above.

Try to find one or two resources from your search, then take a few minutes to consider:

1. The quality of this resource:
   ○ Who created it?
   ○ Does it look to be accurate and well presented?
   ○ Are there any reviews or information from educators who have used it?

2. The appropriateness of this resource to your audience:
   ○ Does it need editing or introducing?
   ○ Would it combine well with any other materials that are used?

3. The licence:
   ○ Is it clear how the resource is licensed?
   ○ What does this allow you to do with it?
   ○ Do you need to attribute or ask for any permissions?

Provide your answer...
Comment

Hopefully you have found something that you think could be useful, but you might also have realised that for some subjects, there is a lot out there and it takes time to find the most suitable resources.

Considering quality, appropriateness, and licensing issues as you search for resources will help you save time, and increase the benefit of drawing on resources created by others.
4 This week’s quiz

Check what you’ve learned this week by taking the end-of-week quiz.

Week 5 practice quiz

Open the quiz in a new window or tab then come back here when you’re done.
Summary

This week you have been introduced to Open Educational Resources and the wide variety of forms they can take. You have looked at some OER repositories and started to consider how Creative Commons licensing works. One further consideration that needs to be made when utilising shared resources is their accessibility and whether it suits your learners’ needs. Accessibility is the topic of next week’s materials.

Meanwhile, what has Rita made of the wealth of possibilities OER can offer her?

Video content is not available in this format.
Week 6: Supporting learners with different needs – accessibility in online teaching

Introduction

Figure 1 Accessibility

It is important to ensure that your learning materials are suitable for as wide a range of learners as possible, whether they are materials you create yourself, or resources that you find online and reuse. Accessibility, usability, inclusion and universal design are all commonly used terms for ensuring that your learning materials can be used by a wide range of potential learners, including those with disabilities who may be using assistive technologies. For the purposes of this week’s materials, we use ‘accessibility’ as a shorthand. Note that this is not necessarily advocating a one-size-fits-all approach to every learning object, and that it can be perfectly appropriate to provide alternative materials or activities for some situations, as long as the overall learning objectives are met for all learners. However, effort and understanding applied to this area can save a
greater amount of effort and difficulties later on, and make the learning experience better for everyone.

To understand some key themes in accessibility, you will first learn about assistive technologies and the impact they have upon the way learners interact with learning materials. You will then learn how to make the materials you use more accessible, and finally some guidance on alternative formats.

Teacher reflections

We join Sarah H. again this week for her experiences of considering accessibility. She focuses on ways of working with PowerPoint to make use of its full potential for inclusive teaching:

Video content is not available in this format.

How did you begin to address accessibility?

By the end of this week, you should be able to:

- define assistive technology and list a variety of examples
- understand how to make most of your online teaching materials accessible
- assess the accessibility of OERs
- understand what alternative formats may be needed in online teaching.

1 What is assistive technology?

The term ‘assistive technology’ is used in this course to refer to any technology that:

- makes it possible for a disabled person to use a computer
- makes their use of that computer more efficient
enables them to access online information such as online learning materials.

Assistive technology, or enabling technology, can also be used in a wider sense to refer to any technology used by disabled people to enable them to carry out a task. For example, a definition from Doyle and Robson (2002) describes it as ‘equipment and software that are used to maintain or improve the functional capabilities of a person with a disability’ (p. 44).

Figure 2 This word cloud, produced for Electronic Information for Libraries (EIFL), symbolises the freedom given through libraries in developing countries that enable access to assistive technologies (Ball, 2012)

Assistive technologies can facilitate access to teaching material by bridging the ‘access gap’ between the teaching material and the learner. The materials may not have to be altered if it has been designed appropriately, and if the learner can access them using suitable assistive technologies. There is often a learning curve associated with becoming skilled in their usage, and this should always be borne in mind. Whilst assistive technologies may make the difference between a learner having access to learning materials or having none, they may not completely remove all barriers or provide the same experience that other learners are getting.

For learners to interact with online learning materials, the kinds of assistive technology they may need to use include technology that facilitates:

- access to a computer and the internet
- access to and manipulation of text
- access to and manipulation of sounds and images.

Assistive technology includes hardware such as scanners, adapted keyboards or hearing aids, and software such as text-to-speech or thought organisation software. Assistive technology is often associated with high-tech systems such as speech recognition.
software, but it can include low-tech solutions such as arm rests or wrist guards (adapted from Banes and Seale, 2002).

1.1 Types of assistive technology

There are many types of assistive technology. Some common tools that you may encounter include:

- **Display enhancement tools.** These might be used to adjust colour combinations on screen, or to magnify text or particular areas of the screen, or to make the mouse cursor more obvious, amongst other things.

- **Audio tools.** These might be used by learners to read text from the screen aloud (also known as text-to-speech), to translate or define key words, or to record contributions or feedback. It is important to note the distinction between text-to-speech tools, which require the learner to select the text to be read and are commonly used by people with dyslexia or a degree of vision impairment, and the much more complex screen readers.

- **Screen readers.** These tools read everything presented on screen, as well as navigation options and menus, and are used by people who are blind or severely vision impaired to operate their computer, as well as to read on-screen text. They can take a long time to learn to use, but when a user is expert they can often listen to items being read out at a much greater speed than regular speech.

- **Writing tools.** These may help learners with spelling or sentence construction, or may help students who cannot use a keyboard to enter text by other means. On-screen keyboards can help learners to enter text by using a switch or pressing the space bar, alternative entry tools can help learners to enter text by nudging a mouse or even using their tongue to open or close an airpipe, and speech recognition tools can help learners to enter text by speech.

- **Planning tools.** These can include tools that create thought maps (and convert these to nested lists, or vice versa), as well as tools for annotating the screen, as reminders or planning aids.

Assistive technologies are not always separate items to be purchased by the user. Often mainstream technologies have assistive technology features built in. Operating systems such as Microsoft Windows and Apple Mac OS contain built-in assistive technologies, such as display enhancement tools and audio tools. Word processing software often includes tools such as magnification controls, navigation via headings, or readability checkers, and modern internet browsers also contain a range of assistive features. Because these are readily available, you can try some of these tools yourself to get a sense of how they work.

**Activity 1 Discovering assistive technology built into internet browsers**

*Allow about 15 minutes*

**Watch the video on Accessibility and web browsers** to see an overview of browser-based assistive aids. Make a note of any that you were previously unaware of.

*Provide your answer...*
Comment
Whilst it is not necessary for every teacher to become an expert in assistive aids, it is a valuable exercise to familiarise yourself with the range of tools available, particularly those available at no cost in browsers and operating systems. This activity helps to highlight some features that you may not have been aware of.

It is important to be aware of the kinds of assistive technologies learners may have available to help them to access online education. However, this is only one part of the story. In order to minimise barriers to disabled learners, you must also deliver learning materials that are accessible. Often, assistive technologies will only function optimally if learning materials have been designed with accessibility in mind. This is what we will consider in the next section.
2 Making your online materials accessible

Figure 3 It is important that course material is accessible to all learners

There are many types of disability, and many ways in which people with disabilities interact with learning materials. Therefore, generalising about all the considerations that need to be made for learners with particular impairments or conditions is tricky. However, there are common aspects of achieving accessibility in learning materials. You should ensure that:

- materials are clear, consistently organised and explanatory
- information contained in visual elements (e.g. images, video, and text) can be accessed without needing vision
- information contained in auditory elements (e.g. video or sound clips) can be accessed without needing hearing
- display elements can be modified to suit the users needs (e.g. magnification, colour contrast)
- tasks can be performed without needing rapid text input skills, manual dexterity, or visual acuity.

Meeting these requirements does not mean that you have to avoid using elements that some people cannot access (such as video, for example), but rather that you should ensure that the information that you are conveying can be accessed by everyone, albeit in different ways or through different media.

2.1 Ensuring clarity of navigation and appearance
Colour

Do not use colour alone to convey meaning. For example, if a completed task in your course has a green dot beside it, and uncompleted tasks have red dots, that is going to be problematic for a colour-blind learner. Changing this to a green tick and a red cross may resolve this issue.

Headings and structure

Structure headings using style features built into the tools you use. These exist in Learning Management Systems, Word, PowerPoint, and other common tools for creating content. Using heading styles when creating text documents enables screen reader users and dyslexic learners to navigate the document more easily (for further guidance see the following ‘Applying headings’ clip).

Presentation slides

Using the built-in slide designs in PowerPoint ensures that all text content is accessible to screen readers. Text that is displayed in the ‘Outline View’ of the presentation is normally accessible to screen readers, but text added via additional text boxes is generally not accessible. Hence it is good practice to copy all text from each slide into the Notes field (which can be accessed by screen readers) and to add into the Notes field descriptions of any visual elements of the slide as well. PowerPoint slides read by a screen reader are read in the order the content was added to a slide, which sometimes is not the proper reading order. The reading order can be changed in PowerPoint to fix this issue.

Text alignment

Where possible, ensure text is left-aligned (meaning the right edge is uneven) rather than justified (where both left and right edges are uniform). If text is left-aligned, the letter and word spacing is optimal for readability. However, if text is justified, uneven spacing between letters and words can significantly reduce readability, especially for some people with dyslexia, who can find they ‘slip’ up and down in the ‘rivers of white space’ that appear in justified text.

PDFs

Avoid using PDFs in which the text is saved as an image – this cannot be read by screen reading software. You can test whether the text is saved as an image by trying to select a few words with the cursor – if words are not individually selectable, then the text is probably an image. Screen reading software therefore cannot detect any words, and therefore will not read the PDF contents. Optical Character Recognition (OCR) software can be used to attempt to extract text from an image, but the process is rarely completely accurate and so you need to examine the output of the OCR software and correct any errors. PDFs generated from accessibly structured Word or PowerPoint documents (see ‘Headings and structure’ and ‘Presentation slides’ above) are usually also fairly
accessible (Devine et al., 2011). The University of Washington has produced some useful guidance on creating accessible PDFs from Word documents.

![Figure 4 Clarity of navigation enhances user experience](image)

**Figure 4** Clarity of navigation enhances user experience

## Layout and organisation

Use clear, consistent layouts and organisation schemes for presenting content. Initially post regular announcements on how to get started, and orient students to the course. Direct students to key areas – contents/overview sections, schedules/timetables, assessment guidance. Organise your course in a linear fashion so a student knows that if they navigate from the first page in the course content to the last, they will have covered all of the required course materials, assignments and assessments.

In text documents (Word, PDF, etc.) content needs to be laid out in a very linear fashion to be accessible, so don't use textboxes (in MS Word, Insert > Textbox) or tables to lay out a document. Tables should only be used for tabular data.

## Tables

If tables do not have an approximately equal number of rows and columns, they should be oriented ‘tall and thin’ and not ‘short and wide’. This is because screen readers read a table linearly, row by row.

If your table has more than two columns and more than ten rows, it's good practice to repeat the column headers every 10–12 rows, just to remind the screen reader user what they are listening to.

To see a few more examples and guidelines, have a look at this page produced by WebAIM, which gives some more information about accessible table design for web pages.
Web links

Use descriptive wording for link text to make each link distinct and the destination clear. So avoid the meaningless ‘Click here’, or having several links called ‘Read more’. This is because many screen reader tools offer the user an option to quickly scan all of the links on a page, so that the user can rapidly navigate through to the page they seek – however, this functionality becomes useless if all the links have generic names or if there are several with the same name.

2.2 Making visual elements accessible

Provide concise alternative text descriptions of content presented within images. This should focus upon the purpose of the image in relation to the teaching points, rather than a description of every visual feature. The alternative text could therefore be different for the same image used in two different ways. For example, Figure 5 below shows the locations of principal cities and rivers of France. It might carry two quite different alternative text descriptions depending on the purpose of its usage:

Figure 5 Consideration of the teaching point is important when writing alternative text descriptions
• (in a lesson on rivers) A map of France, showing that the catchments of four large rivers (the Seine, Loire, Garonne and Rhône) drain more than three quarters of France’s mainland. The Seine drains largely north-westward into the English Channel, the Rhône southward into the Mediterranean, and the Loire and Garonne largely westward into the Atlantic Ocean. The Garonne’s headwaters are to be found in the foothills of the Pyrenees, the Rhône has its source in the Alps, the Loire originates in the Massif Centrale and the Seine rises in the Langres plateau in the north-east of the country.

• (in a lesson on settlements) A map of France, showing that five of France’s twenty largest cities by population are seaports. Le Havre, Brest, Marseille, Toulon and Nice are all seaport cities, while Paris and Bordeaux are principal inland ports. All the rest of the twenty largest cities are situated on or near rivers, but are not considered major port cities.

Note that the first description makes no mention of the cities shown, whilst the second makes no mention of specific rivers. When creating alternative text it is important to focus only on the information the learners need to know about the image, and to not clutter your description with unnecessary information. By doing this, the alternative text also becomes a valuable learning aid for all learners, as you are distilling for them the key elements of the image.

It is not always necessary to add alt text for an image – if the image is purely decorative and serves no educational purpose, you do not need to add alt text. However, if you are creating a web page you must still give it a ‘null alt tag’ (alt=””) to ensure screen readers know they should skip it, otherwise they will say ‘image’ and the learner will be left wondering what it was.

It is also necessary to make the content of video or animations accessible for those who cannot see it. Usually this is done by the provision of a transcript. Depending on the nature of the video content, it may be appropriate for the transcript to simply replicate any spoken words in the video (dialogue, commentary and so on). However, sometimes it will also be necessary to add descriptive detail of a similar nature to the alternative text for images. This is especially vital when the spoken element does not cover key visual information (for example if someone is demonstrating a technique and does not describe every step they make because they believe the audience can see what they are doing).

Ensure that the playback of visual elements can be controlled by the user – you can imagine how difficult it is to listen to your screen reader interpreting what is on a web page at the same time as a video begins automatically playing and you cannot stop it.

**Activity 2 Describing images for those who cannot see them**

Allow about 30 minutes

Please note that, because of the intended learning outcome, this activity itself is inaccessible to screen reader users. However, we expect that they are already familiar with the concept of alt text which is explored here.
The image shows a section of a typical city centre street in Kandy, Sri Lanka. The vehicles with the black soft roofs are known as ‘tuk-tuks’. Draft some alternative text that might be suitable for the following uses of the image:

ii. In a discussion of the modes of transport commonly used in Kandy.

iii. In a discussion of the kinds of businesses one may find together on a typical Kandy street.

iv. In a discussion of the state of repair of buildings on a typical Kandy street.

*Provide your answer...*

**Comment**

Your alternative text should contain similar elements to these:

i. This is a photograph of a typical city centre street in Kandy. Vehicles are parked outside a variety of shops along the street. Visible are two motorcycles, one small car, one multi-passenger vehicle and four brightly coloured tuk-tuks. This may be an indication that small vehicles that can weave in and out of traffic are popular in Kandy.

ii. This is a photograph of a typical city centre street in Kandy. Buildings are packed together with no spaces in between, each only one room wide. A shop selling glass for pictures, doors and windows sits next to a shop selling leather and floor coverings. Beside this is a shop with a brightly-coloured array of children’s toys and balls hanging above the window and doorway. Next to this is a retailer of window blinds, with the neighbouring shop specialising in motorcycle parts. Finally, at the edge of the photograph is a jewellery shop.

iii. This is a photograph of a typical city centre street in Kandy. Buildings are packed together with no spaces in between, each only one room wide, and two or three...
storeys high. Whilst the street-level shop fronts are mostly in a good state of repair, the upper levels of many of the buildings are shabbier and in need of repair. Rainwater goods are commonly dilapidated, and missing in places, and the tiled roofs that are visible are uneven and have been patched with corrugated fibreboard. Where window frames and shutters are wooden, these are starting to warp and fit poorly. The building on the right edge of the picture appears to be covered with scaffolding and blue netting.

It is evident that the alternative text can be written in many different ways, so as to deliver to the learner only the details relevant to the context of its use. Describing all of the possible details to all of the learners could waste their time and create for them a difficult task of trying to separate the relevant details from the irrelevant ones.

### 2.3 Making auditory elements accessible

There are two common ways to make audio elements accessible to those who cannot or who do not wish to listen to them. With videos, the most common technique is to add subtitles or closed captions.

In some cases it may be more appropriate to provide a separate text transcript. This can work very well for audio, or for some videos such as interviews where the visual element isn’t essential to understanding the content. If the video content is more complex, remember that it may be difficult to read a transcript and watch a video at the same time.

In either a transcript or subtitles, it can be important to describe any meaningful sounds, not only the spoken words.

Be aware that if you use an automatic captioning tool, such as the one provided by YouTube, you must check and edit the captions it has provided to ensure accuracy. The output created by these tools is often inaccurate but can be improved manually.

### 2.4 Making display elements adjustable

Learners may view your content through a range of different devices, screens and browsers. However, there are some common features that you can control that help to make sure the materials display in a form that is accessible to a wide audience. The first is to use as default an accessible combination of settings. So it is good practice to use a font type that has good readability (sans serif fonts are often recommended for printed materials, but online some serif fonts can be suitable if they are not cursive or uneven) and a font size of at least 12 point in text documents (and 20 point on presentation slides). Colour combinations should give good contrast (there is a free colour contrast checker which helps you assess the contrast of colour combinations – you should aim for a minimum ratio of 4.5 to 1 throughout – and for large amounts of text you should aim for a contrast ratio of 7 to 1).

Avoid using flashing or moving elements unless there is a means for users to stop the movement. Also, avoid putting text over background images – this decreases readability dramatically.
The second element of ensuring the accessibility of the display of your materials is to put control into the hands of the learner. If you provide documents created accessibly, the learner will be able to apply their own preference of font, colour and so on. If you are presenting materials to be viewed in a web browser, provide links to guidance on how to use your browser to meet some of your accessibility needs and preferences (such as these resources for Firefox, Chrome, and Safari). If you are using another kind of platform to deliver your online teaching (web conferencing, LMS, etc.), try to find out what accessibility features it has, and give guidance to your learners on how to find and use them.
2.5 Ensuring tasks can be completed without needing manual dexterity or visual acuity

Figure 8 Using key functions instead of a mouse can be easier for some learners

Many people use assistive technology that replicates the functions of a keyboard rather than a mouse. Others cannot use a mouse accurately. Therefore, you should make sure that all content and navigation is accessible using the keyboard alone. This means that if you wish to use elements that require manual dexterity (such as drag-and-drop exercises or crossword puzzles) or visual acuity (such as wordsearch games or ‘spot the difference’ images), then it should be possible to complete these using the keyboard alone, and the mouse alone (perhaps in combination with the on-screen keyboard built into most operating systems), or you should provide alternative activities for those who may not be able to undertake the original tasks. To test this, move your mouse out of reach, and try performing the activity using the Tab, Space, Arrow and Enter keys. If it can be achieved, add instructions for your learners advising how to do it. If it cannot be achieved, think about how to provide an alternative activity. Similarly, trial your resource using the mouse alone.
3 Checking the accessibility of materials

When you are creating the learning materials that you will use online, it is a relatively simple process to ensure they are as accessible as possible (see Section 2 of this week’s materials). However, you also need to be able to assess, and if necessary adjust, the accessibility of other people’s materials that you want to reuse in your own teaching. Whilst there are automated tools available that give some indication of a resource’s accessibility (such as MS Office’s Accessibility Checker feature, PowerPoint’s Accessibility Checker feature) or web page accessibility checking tools (such as AChecker or WAVE), you must always apply your own judgement and common sense to the outputs of these tools, and use them as just a part of a more holistic assessment of the resources.

There are surprisingly few guidelines available covering how to evaluate OERs for accessibility, but you might find it useful to take a look at this document ‘Rubrics for Evaluating Open Education Resource Objects’ (Achieve, 2011) which contains a variety of guidance, with Rubric VIII (pages 10 and 11 of the document) giving some useful suggestions as to what to look out for. However, this document is very USA-centric, with references to legislation and organisations that may not be applicable if you are based elsewhere in the world.

OpenWashington (2017) suggest six key accessibility questions to ask when considering reusing learning materials:

- Is all written content presented as text, so students using assistive technologies can read it?
- If the materials include images, is the important information from the images adequately communicated with accompanying alt text?
- If the materials include audio or video content, is it captioned or transcribed?
- If the materials have a clear visual structure including headings, sub-headings, lists, and tables, is this structure properly coded so it’s accessible to blind students using screen readers?
- If the materials include buttons, controls, drag-and-drop, or other interactive features that are operable with a mouse, can they also be operated with keyboard alone for students who are physically unable to use a mouse?
- Do the materials avoid communicating information using colour alone (e.g. the red line means X, the green line means Y)?

It is usually fairly straightforward to adjust features like font size or colour combinations in OERs, and to add or amend alternative text for images. If you wish to use a video that does not have captions (or is not in your language), you have several options:

- For YouTube videos, contribute captions of your own: look on this YouTube Help page for advice (remember the advice in Section 2.3 regarding the quality of automated captions).
- For TED talks, contact the community of voluntary caption providers.
- Use a free software tool (such as Amara or Dotsub) to create your own captions.
4 Alternative formats

As you have already seen in this week, some students might have difficulties with any type of media used in online learning materials. If content can be provided in a variety of alternative formats, students will not have to do their own work to transform this into something suitable for themselves before they can engage with their learning.

For printed materials or inaccessible text formats, some work may be needed to create an alternative resource. This might be, for example, if the text is actually an image such as a photograph or scan – to check this, try ‘highlighting’ or ‘selecting’ the text. If it is not possible, the text is probably an image. It may be possible to use Optical Character Recognition (OCR) software to automatically turn text in an image into a more usable format. Always check the results of any OCR conversion for accuracy. In some cases where the text is not clear (such as with handwriting), it can be more efficient to type in the text rather than use OCR. Headings and other useful styles may also need to be added manually.

If there are images or diagrams in the original resource, someone with some understanding of the subject can determine which of these need describing and can provide the descriptions. In the case of complex images, it may be necessary to produce a tactile diagram for blind students. Tactile diagrams require technical skills and some specialist knowledge. See the video ‘How to make a tactile diagram’ (Art Beyond Sight, 2009), which provides an overview of the requirements and production of this alternative format.

Figure 9 Reading mathematical symbols can be problematic for a screen reader

In some subjects, such as mathematics, music and chemistry, there are substantial difficulties in providing an accessible format that includes the symbolic notation. Most of the guidelines for accessibility skip over this, or assume that the amount of notation is...
small and can be dealt with by supplying descriptions. In fact, communicating these kinds of complex notations to people without vision is a highly specialised area and beyond the scope of this course.

Figure 10 EPUB documents can aid accessibility in a number of ways

Some online materials are offered in e-book formats such as EPUB and MOBI (for Kindle). These formats are not aimed specifically at disabled learners, but have included accessibility considerations where appropriate, so may be beneficial to some disabled students who choose to use e-book readers.

Human voice recordings of text are often preferred by learners to the kind of computer-generated speech produced by screen reader software. Computer-generated voices may also have difficulty in reading out complex notations correctly. This includes subjects such as mathematics, music and chemistry, as well as those with a high number of technical terms. Recordings may be delivered in a variety of formats but MP3 is likely to be the most satisfactory to obtain a balance of sound quality with a manageable file size. If you do not have time to make the recordings yourself, or if you do not wish to do so, there are tools available that will convert a text document into a computerised spoken-word audio file. The free web resource Robobraille will permit you to upload a text document and have it converted into a computerised voice recording, or an e-book.

For audio, a transcript is the standard alternative format, and these can be beneficial to all learners, not only those who are deaf or hard of hearing. It is, however, very difficult to follow a visual medium like video and attend to a transcript at the same time. It is not the same task for a deaf person as it is for a hearing person who can at least listen and read at the same time. Students often need to make notes while watching a video, which
increases the difficulty. So be aware that this alternative may not provide equity of experience for the learners.

Activity 3 Accessibility in your online teaching
Allow about 30 minutes

You have already made notes in previous activities on what you want to achieve in online teaching, and what the role of OERs might be in achieving these objectives. Now consider accessibility – what will you need to do with your existing materials or reused OERs, in order to deliver optimally accessible teaching online?

Make a list of six initial steps you could take fairly easily (for example ‘review my PowerPoints for added text boxes and explanation of images’, or ‘check colour contrast in reused OERs’).

Again, keep your answers in a safe place, as you will revisit them.

1.
2.
3.
4.
5.
6.

Comment
This activity is designed to help you to think about the needs of your audience, and how your learning objects or online teaching materials might work for them. Accessibility should not be viewed as an additional burden for the teacher, but as an element of quality control, ensuring your online teaching is fit for purpose, by not excluding learners with particular impairments.
5 This week’s quiz

Check what you’ve learned this week by taking the end-of-week quiz.

Week 6 practice quiz

Open the quiz in a new window or tab then come back here when you’re done.
Summary

This week you have learned about assistive technologies and how users with impairments interact with online teaching materials. You have learned how to make your online materials more accessible, how to produce alternative versions where necessary, and how to consider accessibility requirements when searching for Open Educational Resources. Next you will look at the factors affecting the way you might make a change in your teaching, and you will start planning to move an element of your teaching online. Rita certainly has something to say about this week’s materials – let’s see how she’s getting on:

Video content is not available in this format.

Rita’s Reflections
Looking back at Week 6

You can now go to Week 7.
Week 7: Making a change in your teaching

Introduction

Figure 1 Planning and understanding changes connected with online learning

We hope that this course might make you think of ideas for changes in your work practices. Or perhaps you are taking this course because you are already experiencing change! This week focuses on some concepts that can help you to plan or understand changes connected with online learning. You need to consider the needs of your learners with respect to their approach to technology, and how the technology and pedagogy interrelate. Understanding debates around how people use digital technology and the effects it has on them should help you to think about how you can effectively combine technology and pedagogy. We then focus on designing new or revised learning activities, and identify some tips to use when trying to make a change.

Teacher reflections

This week we hear from Sarah S. about how she made a change in her teaching:

Video content is not available in this format.
By the end of this week, you should be able to:

- explain the concept of technological determinism
- use the Visitors and Residents model to assess your students’ approach to technology in learning
- make changes to teaching with technologies in a systematic and informed way.

1 Changing the technology or the pedagogy?

Figure 2 How does the use of technology shape your teaching?

How much difference does any technology make to how people teach or learn? There is often a tension between the significance of technology and pedagogy in online teaching. For some, the technology is merely a conduit and their focus is on pedagogy. Others prefer to utilise the possibilities that technology offers us and wait for theory to catch up. It
is probably more useful to think of the two as being involved in an iterative dialogue. Technology opens up new possibilities and is used in ways that its designers never intended, which in turn drives theoretic development, which feeds back into technology development, and so on.

This view of technology, and particularly how it relates to education, is addressed by Weller (2011) in Chapter 1 of *The Digital Scholar*.

This tension between the role of technology and pedagogy is particularly acute in online education. Many of the topics we have looked at in this course would simply not have been possible without internet technology. However we also have to consider the roles of learners and educators, and what they bring to each online education context.

1.1 Visitors and Residents

The different ways in which people interact with, and perceive, digital technology are the subject of ongoing research and debate. For example, Prensky (2001) coined a distinction between ‘digital natives’ and ‘digital immigrants’. He argued that younger generations are immersed in technology when entering education and they have a different understanding and relationship with technology than the ‘digital immigrants’ who have to learn it. This idea was appealing and gained much coverage. However, its claims did not withstand scrutiny, for example Bennett et al. (2008) found as much difference within the technology use of the younger generations that were deemed to be ‘digital natives’ as there was between them and the older generations of ‘digital immigrants’. Importantly, the technology skills of the digital natives were often limited. So it looks like we shouldn’t assume that someone is confident or proficient in using technology based on their age.

David White has rephrased this idea as ‘Digital Residents’ and ‘Digital Visitors’. This describes a range of online behaviours, and the same person can operate in Resident or Visitor mode for different tasks. White and Le Cornu (2011) define them as:

‘Visitors understand the web as akin to an untidy garden tool shed. They have defined a goal or task and go into the shed to select an appropriate tool which they use to attain their goal. Task over, the tool is returned to the shed.

Residents, on the other hand, see the web as a place, perhaps like a park or a building, in which there are clusters of friends and colleagues whom they can approach and with whom they can share information about their life and work. A proportion of their lives is actually lived out online.’

When making changes to your practice in terms of online teaching, be aware of how much the technology is shaping your advances, and try to analyse whether you are acting as a Resident or a Visitor, or whether you expect learners to be one or the other.

You should also reflect on any assumptions you make about who will be capable of engaging with online learning, and the importance of assessing and, where necessary, developing the skills of learners and teaching to properly engage with online learning.

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**Activity 1 Thinking about your learners as ‘Visitors and Residents’**

Allow about 20 minutes

David White explains the Visitors and Residents model in this video entitled [Visitors and Residents](https://www.youtube.com/watch?v=VIDEO_ID).
As you watch the video make notes on which elements you feel might apply to your learners – for which activities do you think they would identify as Residents and for which Visitors? Do you have a mix in your class – and if so in what approximate proportions?

*Provide your answer...*

**Comment**

This activity is designed to help you to think about the technological skills (and needs) of your learners. The models described might help you to categorise the learners with respect to different tasks or technologies, and this in turn should help you identify how to meet their needs with your online teaching. For example, you may find that some of your learners are always present, and could be very comfortable with merging online learning activities into social media practices that are a part of their everyday life. Others may go online to do a specific task that is set for them, but will not think that they need to always be connected. You need to examine your expectations of their behaviours and be flexible to their approaches.

The video places importance on not oversimplifying assumptions about the need to teach digital skills for any audience. Instead, it is important to recognise that all learners and teachers may need to develop their skills in order to fully engage with online learning.
2 Learning design

You will have seen throughout this course that the ways in which we can design an experience for learners online differ somewhat from other forms of teaching. But can we think about this more systematically? Mor and Craft (2012) define learning design as ‘the act of devising new practices, plans of activity, resources and tools aimed at achieving particular educational aims in a given situation’ (pg. 86).

Learning design is an inherent part of any educator’s practice (i.e. preparing for teaching/ training sessions or creating learning materials, activities and assessments). Indeed, it is so core to what educators do, that it’s often taken for granted; it’s assumed that it ‘just happens’. In other words, ‘design’ is so embedded in a practitioner’s practice that it tends to be implicit – not formally articulated or externalised for others, apart from at a relatively superficial level in the module syllabus or lesson plan.

In recent years, there has been a growing interest in trying to better understand educators’ design processes and to make them more explicit. There are a number of reasons for this, but three are particularly worth noting.

1. In order to ensure the quality and robustness of educational innovations, they need to be reviewed from various perspectives – technological, pedagogical, and others. The sooner the innovations are reviewed, the easier it is to make any necessary adjustments. By sharing and discussing innovations at the design phase, we can avoid costly mistakes at later stages of production.

2. By making the design process explicit, it can be easily shared with others, which means good practice can be transferred.

3. The variety and complexity of resources and technologies that are currently available means that teachers and trainers need clearer guidance to help them find relevant
tools and resources, as well as support in incorporating these into the learning activities they are creating.

However, it should be noted that the term ‘learning design’ is not without controversy and overlaps to some extent with other terms, such as ‘instructional design’, ‘curriculum design’ and ‘module design’. Mor and Craft’s definition represents one possible interpretation, and indeed their paper discusses alternative definitions proposed by others.

Activity 2 Employing a Learning Design approach
Allow about 40 minutes

1. Visit The Open University’s Learning Design resources site.
2. Read the home page, and then browse the Downloads list to see if there are any resources there that may be of interest to you.
3. Make some notes about which tools you could apply, and how you think you might do this to create or redesign some teaching for online learning. For example, you could plan a workshop activity with others, or use the resources as a guide to your own design work.

Provide your answer...

Comment
Many ‘good ideas’ or ‘best practice’ resources are available online for teachers to use. This activity helps you to start thinking about the kinds of resources you might look for, and how they could be altered to fit your teaching needs.
3 Making the change

This week you have looked at a way to view your learners (the Residents and Visitors model) and the role of technology and learning design in your plans to move your teaching online. The final section of this week’s materials will focus on tips for making changes in your teaching practice.

In their ‘Beyond Prototypes’ report, Scanlon et al. (2013) offer four ‘recommendations for researchers’ which might be relevant to you when designing your move into online teaching:

- Research teams should identify, at an early stage, the steps required to enable scalable and sustainable implementation beyond prototypes, so as to enhance learning.
- Researchers need to engage fully with the individuals and communities that will play a role in the implementation process.
- Research teams should consider adopting Design-Based Research (DBR) as a systematic but flexible methodology for research-led innovation, based on collaboration among researchers and practitioners in real-world settings.
- The interim and final results from design-based studies should be systematically shared with other researchers so that the process of innovation can be compared, expanded, and continued over time. They should also be widely disseminated to policy makers and practitioners, through events such as ‘what research says’ meetings.

DBR, mentioned in the above recommendations, is a methodology that may be of particular interest when designing changes into education practice. Some of the core characteristics of design-based research in education are that it implements iterative changes in real-life practice, testing out new pedagogical theories or frameworks for conceptualising learning.

If you would like to learn more about DBR, this video 'Design-Based Research' gives a short introduction.

3.1 Hints and tips

From our experiences as practitioners and researchers in educational technology, we think the following guidance could also be useful when embarking on or managing change:

- **Start small and start now.**
  
  The reason for this is that over time you may start to overthink your planned change, the objectives may become lost in potential issues or you may start to vacillate between various potential changes as to which one to focus on first. Pick something small that you can pilot and see the results from, plan it, and do it!

- **Plan.**
  
  Set out all of the details. What new online teaching technique will you try? With which group of learners? Covering which topic? By which date must you be
ready? What will be your fallback plan to ensure the learning objectives are met if your trial fails to deliver? How will you evaluate the successes and failures of your attempt? (See next week’s materials for further coverage of evaluation). As time goes by and you gain confidence in trying new teaching ideas online, you can be more flexible and formulate less rigid plans, but at the start of your journey, planning will make you feel more secure in your actions.

• Get permission.
  If you work for an education provider, you may need to get approval for your proposed change. Take time to prepare, give the approver all the information they may need, explain the benefits as well as the risks, and show that you have thought long and hard about the change and its potential benefits for you and your learners. If permission is not granted, demand feedback, and adjust your proposal before seeking approval again.

• Don’t be a perfectionist.
  With any changes to your teaching, adjustments will need to be made. Observe what works and what doesn’t work, modify, and try again.

• Reflect honestly.
  Reflect on what you’ve learned, reflect after further reading, reflect after discussing it with students or colleagues, then reflect after giving it a try. This will be covered further in next week’s materials.

• Collaborate.
  Share your initial attempt, and your reflections upon it, with colleagues or networks. They may spot additional adjustments that you can make, and will be better placed to identify objectively the positives in a change that you feel did not go well.

• Listen to your learners.
  Ask the learners for their impressions of what you tried. Often they will see the positives of ‘trying something different’ even if it didn’t go as you’d hoped.

• Learn from failures.
  Some changes work, some don’t. Sometimes the technology fails, sometimes the pedagogy is not a good fit, sometimes external factors have an influence. But just because something goes wrong, don’t lose your enthusiasm and curiosity in online teaching. Instead, think about what you have learnt and how that will make your next steps better.

• Celebrate success.
  It may be a small change, but if it works, allow yourself to enjoy the success. Share your story with colleagues and your networks. Build upon your success to try something else or to repeat the first change in a different context.

If you are still struggling to pin down exactly what actions to take to begin your online teaching journey, this blog post by Mooney et al. (2012) might offer some useful suggestions, as might this article by Sharrar and Bigatel (2014).
4 Analysing your practice and scope for change

It is now time to focus on your own practice.

Activity 3 Analysing change in teaching practices
Allow about 60 minutes

1. Think about the teaching practices that you are familiar with (i.e. not just your own practice) in your organisation over the last five to ten years.

2. Make some notes in response to the following questions:
   c. How do you think teaching practice has changed?
   d. How significant have the changes been?
   e. Which technological developments do you consider to have been the most important? Why?
   f. Which aspects of practice haven't been impacted strongly by technology? Why might this be?

7. Now think about your own practice, relative to the general teaching practices you thought about in questions 1 and 2 above. How has your practice changed? Which technological developments have been the most important?

8. Finally, think about what you want to change in your own teaching practice with respect to online teaching (refer to your relevant notes from previous weeks). How will technology play a role in your online teaching in the near future? What technological developments would you like to happen to support your online teaching even further?

Provide your answer...

Comment
As we approach the final week of this course, your plans for taking your teaching online should be starting to become more detailed. The questions in this activity should help you to incorporate technologies appropriately into your plans.
5 This week’s quiz

Check what you’ve learned this week by taking the end-of-week quiz.

Week 7 practice quiz

Open the quiz in a new window or tab then come back here when you’re done.
Summary

This week you have been introduced to the concept of technological determinism and the Visitors and Residents model of technology familiarity. You have investigated learning design, and have started to plan your move into online teaching. In the final week of the course, you will explore the evaluation of online teaching and how to assess the effectiveness of changes to your practice.

Let’s check in with Rita and see if she’s ready to move into online teaching now:

Video content is not available in this format.

Rita's Reflections
Looking back at Week 7

You can now go to Week 8.
Week 8: Evaluating changes and enhancing practice

Introduction

Figure 1 Licence to try!

In this final week, we will explore ways to monitor, evaluate and analyse your teaching online.

Whereas face-to-face teaching often relies on direct observation of students to evaluate their behaviour, some of the ‘action’ in online teaching is not as readily visible. However, teaching online offers opportunities to use data and to engage with learners in ways that are more easily embedded than they could be in a classroom context. For example, online teaching can harness the teacher’s and learners’ ‘footprints’, which are captured as data in the online realm. This provides opportunities to make greater use of data about the
learner’s behaviour and performance. Learning management systems can log data such as attendance in tutorials, quiz responses, views of material, time spent on particular activities and more. The field known as ‘learning analytics’ has been built around understanding the potential of working with such data, including its challenges and risks. It is a complex field that is still developing, but you will start this week with an insight into how learning analytics can be a valuable tool for you.

Gaining feedback and reflecting on practice is important for both teachers and learners, and this is another area where teaching online offers its own opportunities. We will therefore describe some common mechanisms for feedback and look at some strategies to encourage reflection through activities embedded into the learning.

You should also develop the ability to enhance your practice of online teaching. To help you with this, we will explore the notion of conducting ‘action research’ as a practitioner.

Teacher reflections

Let’s see what Sarah H. has to say about evaluating her own online teaching:

How do you evaluate your online teaching?

By the end of this week, you should be able to:

- understand how learning analytics can be used to evaluate learners’ behaviour
- be able to gather and understand student feedback
- apply some strategies for embedding reflection in your online teaching
- plan an action research project for scholarship that seeks to improve your online teaching.
Learning analytics

It's important to analyse and reflect on your teaching practice

There are a number of different methods that we can adopt to evaluate online teaching. Oliver (2000) provides a detailed overview of some of these methods, including:

- online synchronous focus groups (Cousin and Deepwell, 1998)
- web-based questionnaires (Phelps and Reynolds, 1998; Taylor et al., 2000)
- creation of an online feedback discussion area (Taylor et al., 2000).

Oliver goes on to summarise the general difficulties with the above methods, which can be grouped into two main themes: the processes are largely ‘uncontrolled’ and feedback can be unfocused or anonymous; and methods for evaluating this kind of data are still developing, with different approaches leading to different conclusions.

Learning analytics offers an alternative to these methods of gathering feedback and reports from learners. These approaches instead make use of the data left by learners and teachers as they act: their ‘trace data’. These can tell us when learners join courses, when and how they engage with online activities, view pages, borrow resources from the library, set or complete activities or assessments, and so on. Any interaction with a web-based system can be tracked, and this data could be used to better understand what learners and teachers do. The widespread use of virtual learning environments (VLEs) – also known as learning management systems (LMSs) – has meant that educational institutions now deal with increasingly large sets of data. Each day their systems gather more personal data, systems information and academic records.

Learning analytics is a field of innovative research, but it is increasingly something that many educators and institutions make use of through new tools, dashboards and reports, using online data to investigate user activity. It helps to answer questions such as:

- How many people visit the website / online learning materials?
- When do they visit / interact?
Which links are popular?
How many people complete the activities?

Answering the questions posed above could involve analysing large data sets from VLEs and other technologies used for learning. Learning analytics can go one step further by providing actionable insights – they take trace data from educational settings and suggest, prompt or initiate actions to improve learning and teaching. You may have heard the term ‘big data’ used in discussions of technology. It is used in a lot of different ways, but essentially means that the dataset is very large and also very complex. Because of this, it may not be possible to use a simple, traditional approach to data processing and analysis. Learning analytics of the behaviours of large numbers of students can easily fall into the category of big data. But equally, you might look at the behaviour of one class of students over a course and find that useful insights can be gained without advanced techniques and tools.

For example, in an online forum discussion associated with a particular online module or course, a VLE could capture a range of forum data, including:

- who accessed the forum
- when they did this
- how long they stayed
- what operating system they were using
- how many words they added.

Any of these data could be used to create analytics. However, only some of these analytics would be useful to teachers. It is not possible to identify which analytics will be most useful without knowing something about how the forum is being used. The presence of a learning design should identify the purpose of the forum in relation to learning outcomes. This makes it easier to decide which analytics to use.

### Activity 1 What can we learn from learning analytics?

Allow about 45 minutes

Professor Bart Rienties of the Institute of Educational Technology at The Open University has played a leading role in research and practice around learning analytics. Here he is giving his inaugural lecture on the subject in January 2018. His talk introduces some of the findings from learning analytics research at the OU, and some of the ways in which this provides insights for our teaching.

Watch the video, and as you do so, make notes about what kinds of learning analytics you would like access to regarding your own teaching. When moving your teaching online, are there any of these kinds of learning analytics that you could begin to collect? How might you do this?

Provide your answer...

Comment

For some teachers, working in an organisation may provide them with access to certain data from learning analytics. Conversely, this kind of data may not be routinely collected, or not routinely shared with teachers. This activity should help you to think about what you currently have available, and what you could gather when teaching.
online. The video shows some of what is possible, but also that there is a lot more potential to use learning analytics than is currently mainstream practice, particularly if we improve our abilities for data collection and analysis.

If you are interested in finding our more about learning analytics, you may like to read Ferguson (2012) and Long and Siemens (2011) as well as Jisc’s Code of Practice for Learning Analytics (Sclater and Bailey, 2015).
Figure 3 Listening to the feedback from your learners is an important part of the teaching process

Student feedback is often collected in both online and face-to-face education settings. In online learning, you may embed a feedback survey into the learning management system. You may also want to use forums or email to provide a different means for feedback to be received, or to direct students to fill in your survey.

2.1 Eliciting feedback

This feedback can be valuable and insightful, however, be aware that a small proportion of it may be unhelpful or even abusive. Tucker (2014) studied the proportion of abusive or unprofessional feedback in a single Australian university and concluded that just 0.04% of the sample comments could be classified as abusive or unprofessional. Most feedback should at least be informative. Hopefully, some can be turned into actions. It may be worth explaining at the start of the survey that the most valuable feedback is direct, honest and specific, critiquing only actions or materials and not personal traits.

2.2 Understanding feedback

Research has explored the data received as feedback from students in various ways. The findings have not always been consistent, but they do provide some useful considerations for practice.
Johnson (2003), in a summary of several studies, concluded that teachers who mark more leniently are routinely rated higher in student evaluations, and that students who receive higher grades also give more favourable feedback. Centra (2003) found that more rigorous courses received lower ratings than ‘easier’ courses. Given these factors, Parker (2013) goes on to consider three means of assessing teaching effectiveness and course quality which are less likely to fall victim to these biases:

- evidence-based teacher self-reviews.
- peer observations.
- external reviews.

If you watched the video of Professor Bart Rienties discussing learning analytics in the previous section, you might recall that research using data from The Open University does not show a correlation between attainment and satisfaction. This satisfaction data is collected through a survey delivered to students near the end of the course, but prior to the student finding out their final grade. It may be that this earlier timing of the survey removes a direct impact of grades on satisfaction. So perhaps we need to think carefully about when and how we ask for feedback.

Students perceive online courses differently from traditional courses. In comparisons of online and face-to-face MBA courses, Cao and Sakchutchawan (2011) found that whilst there was no difference in success rates between students of online courses and students of face-to-face courses, the online MBA students reported lower satisfaction with their courses. Song et al. (2004) examined feedback from online graduate students and concluded that course design and time management were crucial components to successful online learning, while lack of community and technical problems were most challenging for online learners.

The design of online courses, and the ways in which instructors act, impact on the perceptions of students towards them. Kauffman (2015) gathers together a range of studies examining the success of online learning in various contexts and concludes that ‘courses should be structured around reading materials, lectures and assignments organised into units with clear learning goals in mind’. In other words, course instructors need to ensure that there is alignment of objectives with instructional methods, learning activities and assessment methods (Blumberg, 2009). Instructors should provide timely feedback and serve as facilitators of discussion and interaction just as they do in traditional courses. Courses should provide opportunities for peer collaboration and sharing of ideas in order to develop an online community of learners, rather than feelings of isolation (Song et al., 2004). Otter et al. (2013) used questionnaires to determine differences in perception between online and face-to-face courses, among students and staff. Findings showed that students perceive online courses to be more self-directed than staff do, and that students online must be more willing to teach themselves. Students in online courses felt more disconnected from staff and fellow students than staff perceived they would feel. Students also have a lower perception of the role of the teacher in online courses than staff do.

Activity 2 Effective use of questionnaires
Allow about 30 minutes

Create up to five questions that you think would provide useful feedback for you from your students. While doing this, think about the following:
How would you make sure the questionnaire is not leading students to respond in a particular way?

Does your institution have a standard feedback questionnaire that is given to students? If so, are there questions that you can take from this? Is it appropriate to online teaching?

What type of responses would you like? (For example, closed questions on a scale, or open comments, or a mixture of both?)

How would you analyse the results?

Comment
This activity helps you to think about one specific set of data that you would like to obtain, and how you might go about it. The questions asked need to be considered very carefully in order to ensure that the data generated is useful to you.

2.3 Reflection

It is important to reflect on your own practice as a teacher in order to develop. This means continually considering and questioning how you teach. Schön (1987) argues that it is useful to think about this in two ways:

Reflection-in-action – thinking and responding quickly to events as you teach. In online learning this might mean, for example, checking with students if you notice that they are not responding in an online tutorial session. In order to be able to reflect-in-action, you need to maintain awareness of the situation. This might require you to regularly check on student behaviours, like whether they are contributing on forums or in tutorials.

Reflection-on-action – considering what happened afterwards in a deeper fashion. For online learning, reviewing student feedback and analytics can be a good prompt for reflection-on-action.

In addition, it can be valuable to consider how to include activities in your online learning that ask students to reflect on their learning. A review by Means et al. (2009) identified that ‘the available research evidence suggests that promoting self-reflection, self-regulation, and self-monitoring leads to more positive online learning outcomes’ (pg. 45). An example of this would be a short questionnaire that learners can take to represent their own view of their understanding of the subject, and how well they think they are learning. If you make it
clear to the learners that you will check their responses, this can also provide you with some data, as well as being a useful part of the learning experience for them.
Figure 5 There are many advantages to ‘action research’

Action research (sometimes known interchangeably as practitioner research) can be a great process to help you make informed choices about pedagogy and technology in online learning. This type of research is focused on solving particular problems and enhancing your practice. It is focused on doing research that is relevant to you as a teacher. It might seem daunting to undertake a research project but action research is an easy approach to get you started, particularly because it helps you to focus on understanding and changing your practice. If you already do other forms of research, you might find that this requires some adjustment to how you think.

Some key concepts of this type of research are:

- Teacher-initiated – it really is about using a research process to enhance and develop teaching in your context.
- Empowering – it supports you to be responsible for your practice and potentially to inform policies or principles used more widely in your institution.
- Small-scale – it is manageable and something you can fit into your schedule.
Activity 3 Making use of practitioner research
Allow about 40 minutes
Read this article at EdFutures (2012) to understand more about practitioner research. As you read, think about the following questions. Afterwards, write a short response for each one:

- Can you think of a key issue or question that you would like to research around the potential for you to use online learning in your work?
- What sort of data collection method do you think you should use and why?
- Is there anyone you want to work with to create a community around your project?
- How would you design the research so that the results would be useful to you and others in a similar position?

Provide your answer...

Comment
This activity is designed to help you to combine several of the elements covered in this course. You should consider learning analytics, action research, networking and sharing, and how they could all be brought together to enable you to effectively evaluate your own online teaching practice.
Summarising what you have learned this week, here is a guide to aid your thought processes as you work on your own evaluations of online teaching:

- Using your responses to Activity 2 earlier this week, identify exactly which aspect(s) of your online teaching you want to evaluate.
- Identify from where or whom you will obtain the information you need.
- If using analytics, what kinds of data are particularly relevant to your objectives? How can you get hold of these, or make sure they are being recorded? How will you use the data to draw conclusions?
- If using feedback, which method(s) will you use? Synchronous or asynchronous forums dedicated to feedback? Dedicated questionnaires? Peer observation?
- If using a questionnaire, use your responses from Activity 2 earlier this week to draft some questions you might wish to use.
- Using your responses from Activity 1 earlier this week, identify any other relevant people with whom you might wish to work to create a community around your evaluation activity.
- As well as analysing the feedback received regarding your online teaching, review the value of the data you have obtained. Would any modifications to the evaluation process provide more valuable data?
5 Week 8 Quiz

You can now proceed to complete your end-of-course badge quiz. This is similar to previous quizzes, but this time you will have to answer 15 questions.
Remember, this quiz counts towards your badge. If you're not successful the first time, you can attempt the quiz again in 24 hours.

Week 8 compulsory badge quiz
Open the quiz in a new window or tab then come back here when you’re done.
Conclusion

It seems fitting to end this course by talking about evaluation, but it is almost certain that any evaluation you undertake will lead you to more ideas, changes and new developments in your teaching.

Well done for making it through. We hope you have found both the content and the experience of this course useful. Taking your teaching online can be daunting, but completing this course will have given you insights that enable you to take on the challenge and create exciting new opportunities for your learners.

If you wish to explore Open Education further, take a look at The Open University's MA in Online and Distance Education.

Before you move on, let's pay one final visit to Rita. Time has moved on since she completed this module, and she has now had four months to try taking her teaching online:

Video content is not available in this format.

Next steps

If you would like to take your study of this subject area further, you may be interested in the following courses:

H880 Technology-enhanced learning: foundations and futures
The Online Educator: People and Pedagogy
Tell us what you think

Now you’ve come to the end of the course, we would appreciate a few minutes of your time to complete this short end-of-course survey (you may have already completed this survey at the end of Week 4). We’d like to find out a bit about your experience of studying the course and what you plan to do next. We will use this information to provide better online experiences for all our learners and to share our findings with others. Participation will be completely confidential and we will not pass on your details to others.
Your notes

Week 1

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Week 2

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Week 3

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References


References


**Acknowledgements**

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Week 2

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Activity 2: Video: Flipped Teacher Training; https://www.youtube.com/watch?v=GuA8fP-CHu9c
Activity 4: Infographic: taken from: http://www.edudemic.com/a-teachers-guide-to-social-media; diagram provided by Online Colleges

Week 4

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Week 5

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Week 8: Evaluating changes and enhancing practice
Acknowledgements
Week 7

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Week 8

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Activity 3: Practitioner research: assuming this will be a link and not embedded?

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