

Appendix 1: Tools for creating digital materials

This appendix offers guidelines on creating digital materials and provides some useful ‘How to ...’ tips for aspiring BL course builders. We will look at five broad categories of digital materials:

- audio
- screencasts
- video
- interactive activities
- e-learning modules

The discussion of each will overlap to some degree. For example, much of the advice for creating audio materials can be applied to screencasts and videos, there are considerations that are pertinent to both screencasts and videos, and creating e-learning modules often involves bringing together examples of materials from some or all of the first four categories.

Creating digital materials of any kind requires more time and effort than traditional paper-based materials. You also have to acquire certain skills and a degree of proficiency in using the necessary equipment and software. If this seems daunting, don’t forget that a recent generation of people, who never even operated a typewriter on a regular basis, now use word processors and email applications every day with the same level of unconscious skill with which they drive a car or operate a kettle.

The assumption here is that if you want to create these types of materials, you will find a way to acquire the necessary skills. Our focus is on using those skills to produce good-quality teaching materials.

Audio

What do I need?

The minimum is a device with a microphone and a speaker, and a piece of software that can record and play back audio and save it in a common audio file format (see below). This could be a computer, a smartphone or tablet, or a digital recorder. You then need to be able to transfer the saved audio file to distribute it to your students. You might do this using email, a file-sharing service or by placing it on an LMS, blog or website.

The next step up from the minimum is the addition of an external microphone to achieve better quality, and using audio editing software to refine and combine your recordings, and add music and sound effects.

Where do I start?

First of all, write your script. Recording audio materials is always easier if you can read a pre-prepared script. This is especially the case if you do not have access to editing software as this means you have to get through the recording without a mistake or start again from the beginning. There are a number of factors to take into consideration as you write then record teaching materials.

Consider the overall length of the recording. If your aim is for your students to listen for detail, keep the recording short: no more than two to three minutes. Your recording can be longer if your aim is to provide your students with extensive listening. However, this puts greater pressure on your time, and on writing and recording skills. Shorter recordings are better for students with lower levels. To get an idea of the length, time yourself reading the script at speaking speed appropriate to your students' level.

Be aware of the language content. Recycle key vocabulary from the coursebook or previous lessons. You can also use a student's dictionary to determine whether an item of vocabulary is appropriate to your students' level. Pay attention to the length and complexity of your sentences. Keep them short and simple for lower levels, increasing in length for more advanced students. Make considered choices about the grammatical structures you use. You don't need to be completely constrained by your students' level, especially when you are asking them to listen for gist, however, don't make it too difficult.

Keep it realistic. If you are writing and recording a dialogue for listening practice or to provide a model, be aware of the two points above but also keep the language as realistic as possible. Ask yourself: "What do people really say?" For example, always incorporate naturally occurring contractions and linking sounds.

Using your voice

Once you have your script, rehearse it out loud and make changes to anything that sounds awkward or is difficult to say naturally. When you record, exaggerate your intonation and sentence stress slightly. Spend a little time listening to your favourite radio presenter and notice how they use their voice.

Editing

If you do not have access to audio editing software, make two or three recordings of your script and choose the best one. If you are able to use audio editing software, you can edit together the best parts from each recording. Editing audio on a computer is similar to editing text. Your recording is displayed as a wave form. You can move back and forth along that waveform or zoom in on any

section. Like editing text, editing audio involves highlighting then deleting the parts you do not want, and cutting and pasting parts you want in a different position. This means that if you make a mistake when you are recording, do not stop the recorder, but leave a short pause then try again. You can remove the mistake when you edit.

As your ambitions and competence with the editing software grow, you can add music and sound effects. The editing software allows you to have several tracks. Place your music and sound effects on different tracks to your voice recording. You can then adjust the levels of each separately. This allows you to fade the music under the voice or to make sure your sound effects do not drown out the all-important dialogue.

Distributing the audio

The most common audio file format is mp3. Saving your audio in this format means that none of your students will experience problems playing it on their devices. An mp3 file compresses the information to produce smaller files than many other audio formats. However, it is still the case that the longer the recording, the larger the file. With audio editing software, you can adjust the output quality to create smaller files. However, if you compress the audio too much, the fall in quality is noticeable and may affect how well your students can understand the recording.

Some other common audio file formats include m4a which is often created by Apple devices. M4a is not as universal as mp3 so use one of the many free programs available online to convert from one to the other. Another format is wav. This does not use compression so wav files are much bigger than mp3 or m4a files. However, because they are uncompressed, wav files have better quality sound. If you edit your sound files, it is better set your recording device or software to output a wav file. When you finish editing, save the result as an mp3 file.

Try and avoid emailing audio files that are over two or three megabytes in size. The easiest way to distribute them is to upload the file to an LMS, or website. This gives your students the option to play the audio directly from the platform or download it to their own device. In the latter case, it is good practice to indicate the file size in your written description of it.

Uploading an audio file to a platform or website is usually very straightforward. When you create or edit a page on your LMS, wiki or blog, one of the editing controls will be a button labelled something like 'Add media'. Clicking on this gives you the option of either browsing your computer's drive to find the file you want to upload or simply dragging the file into the web browser window. Once the file has uploaded, you will be given the option to add it to the page you are editing.

If you make longer recordings such as presentations or class projects it is better to distribute these using a file-sharing service. Students receive an email notification that the file is available for download and they can access it at their convenience.

Other tips

Create any supporting materials such as a transcript, questions for detailed or gist listening, and discussion questions while you are writing the script. This allows you to make adjustments to both before you start recording and editing.

Screencasts

A screencast is a video showing what is happening on the screen of a computer. You watch the progress of the mouse cursor as the computer's user moves it to indicate on-screen items and click on icons, menu items or hyperlinks. Many screencasts include a spoken commentary in which the computer's user explains what she/he is doing. A common use of screencasts is to demonstrate how to use some feature of a piece of software. With this as a model, language teachers can use screencasts to demonstrate how to use features on a platform or set up an online listening task by showing how to use the website in question. Screencasts are also a quick way to deliver short presentations or give feedback while making reference to computer-based resources such as online dictionaries. The output of a screencast program is a video file which can be uploaded to a platform, uploaded to YouTube then embedded in a webpage or blog post, or distributed using a file-sharing service.

What do I need?

There are several screencast programs available. Some are standalone software applications, others work through a website. The most basic simply let you record what is happening on your computer screen while simultaneously recording the sound entering a microphone attached to the computer. There are programs that integrate with IWBs which allow you to record what happens on your board during a lesson. At the top of the range, there are screencast programs which have advanced video editing tools allowing you, amongst other things, to manage the visual and sound elements separately, cut out and replace parts of the video and add text and animated graphics. In each case, the resulting video is played in a common video format.

Other than a computer and the software, the only thing you need is a microphone. The advice here is always the same: the better the microphone and the quieter the environment in which you record, the better the results.

Where do I start?

A simple example of using a screencast program is to record a short presentation video. This is the basis of the practical activity 'Teacher-produced grammar course' (see Section 2, Chapter 2). The procedure can be followed using any screencast program in conjunction with standard presentation software. Using presentation software allows you to design the visual element of your video and deliver it in a familiar way. You may even be able to repurpose existing presentations that you have used in class.

Here are some things to keep in mind when preparing the slides:

- Have a title slide giving the subject of the presentation.
- Start with a brief overview of the content of the video.
- Keep the text on each slide to a minimum and make the font size as large as possible. This is because your students may watch the video on the small screen of a smart phone.
- Use colour to highlight key words and information. Be consistent. If you are using red for the target language, use red this way throughout the video.
- Use pictures which illustrate the subject of the presentation. For example, a picture of somebody performing an action as part of the presentation of the present continuous, or a picture illustrating a new piece of vocabulary. Make the pictures as large as possible and label them. Avoid including unnecessary images which may detract from the message of the video.
- Finish with a summary and, if necessary, a task for the students to perform or prepare for based on the content of the video.

Once you are satisfied with your presentation slides, script what you plan to say. This will allow you to control the length of the video and should reduce the number of takes you need – extemporising a voiceover is more difficult than you imagine! Practise reading the script while clicking through the presentation. Time how long this takes. If it is longer than five minutes, consider cutting parts of the presentation.

Once you are ready to make the screencast, set your presentation to the first slide, open the screencast software, and click record. As you read the script, use your keyboard or mouse to advance through the presentation. Try to position your microphone so that it does not pick up extraneous sounds. See the advice on ‘Using your voice’ in the audio section above. When you have finished, stop the recording. You do this using a button on the screen or a key on your keyboard.

If, instead of using presentation slides, you wanted to demonstrate how to use a feature on your platform, you would start and finish in the same way as above but the main part of the screencast would involve using your mouse to operate the feature while your voiceover describes what you are doing. This is more difficult to master than clicking through a presentation. As before, script what you want to say and rehearse reading the script while performing the on-screen actions. You may also need to prepare some examples to use as part of your demonstration, for example, a word and its definition as a demonstration on how to contribute to a glossary, or some key items of vocabulary to show how to use an online dictionary.

Editing

The more advanced screencast programs have prices which reflect their extensive editing and production features. However, if screencast videos become a common format for your materials, or your ambitions extend beyond the basic capture of what appears on the screen, this higher-end software can be a good investment. To help you decide, most companies provide a trial version of their software that you can download and use for free for a short period of time.

The editing features operate by putting each on-screen element and any audio on horizontally stacked tracks or layers. These are then displayed on a timeline so you can control the point in the video when each element or combination of elements is visible on the screen. As with the audio editing software described above, visual and audio elements of the video can be cut or copied and pasted to new locations on the timeline. One of the benefits of this editing capability is being able to record the screen and the voiceover separately and then marry them together in the edit. This means you can concentrate on each individually or distribute the roles of mouse-operator and voiceover artist to different people.

If you are coming to this for the first time, the myriad range of features and functions offered by these programs may seem overwhelming. To help you get started, go to the software company’s website. Instead of issuing manuals, they use their own products to create libraries of tutorial videos. The more established programs have communities of users who share advice and answer each other’s questions on dedicated online forums.

Distribution

Video files are considerably larger than audio files. One minute of full-screen, high-definition video saved in mp4 format (which like mp3 compresses the information to some degree) can be as large as 25Mb. This file size can be lowered by reducing the screen size and definition but with a concomitant loss of visual and audio quality.

Unless the video contains information specific to a particular student in the form of individual feedback, it is better to upload video files to a website from which they can be shared. One of the most common is YouTube. If you already have a Google account for email or any of their other services, then all you need to do is log on and go to YouTube. In the top right of the screen is the

upload symbol: a small arrow pointing up. Click on this, then drag your video file into the web browser window. While your file is being uploaded and converted to play on YouTube, you can give it a name, a description and add tags to help people search for it. Once it has been processed, click on 'Publish' and your video is now available to view on YouTube. At this point, YouTube shows you a short but complicated looking website address. This is the embed code for your video. Copy this then log onto your platform or blog as an editor. Select the page you wish to embed the video into and paste the embed code. The majority of platforms and website editing tools will instantly recognise this as a YouTube embed code and your video will appear on the screen. You can now share that page with your students.

Video

What do I need?

Surprisingly little! All smartphones, tablets and most consumer cameras can be used to shoot video. There are simple apps for editing and uploading videos from mobile devices and most cameras come with basic computer software offering similar features.

However, if you plan to make more than the occasional, one-off video, there are a few things that will help you produce better results:

A tripod: If your videos are to be more than a few seconds long, it is good to have something to hold your camera still. You do not need a full-size photographic tripod. There are lots of mini-tripods for holding phones or tablets or small cameras. These can sit on tables and some have flexible legs that can be twisted round a chair back or coat hook.

An external microphone: Language teaching material with poor sound quality is not fit for purpose. The built-in microphones on many devices is either too small to produce good results or, once you've positioned your camera, too far away from the speaker to provide the level of sound quality you require. Tiny clip-on microphones work well for a single presenter or interviewee while a microphone on a table in the centre of the room or on a microphone stand can be used to capture a class discussion. In the latter case, you need an omnidirectional microphone, i.e. one that captures sound coming to it from all directions. These microphones can often be connected directly to smartphones, tablets and some cameras.

Editing software: Simple editing apps allow you to 'top and tail' videos, i.e. cut off the parts at the start and end when you lean close to the device to press the record button! There are many free and reasonably priced computer-based video editing programs that allow you to perform timeline editing (described above in the section on screencasts), add titles, music and sound effects. Many of these programs are aimed at occasional video-makers and so are designed to be quick to learn and easy to use.

Where do I start?

The most common application in a BL course are videos of the presentation part of a lesson used to flip the classroom. The students watch the video prior to attending the class. The time with the teacher is then spent on the students practising the target language and receiving instant feedback on their performance. This type of presentation can be done using a screencast, as described above, or by videoing the teacher at the board delivering the presentation. This option is preferable to a screencast if:

- the presentation is to be longer than five minutes as watching a teacher speak and write on the board can hold a viewer's attention longer than static slides.
- the presentation depends on the use of realia as this can be more effective than static images.
- the video is of an actual lesson and includes the participation of students.

Despite the potential for a longer attention span, it is still better to keep presentations as concise and to the point as possible. If a student's performance in a lesson depends on them having watched your video, you want to avoid boring or confusing them.

Plan and rehearse before you video yourself. Make sure you have everything you need, for example, board pens, realia, example sentences or vocabulary. If you do not have somebody to operate the

camera for you, do a short test to check that you and the board are in shot, the light in the room is good enough and that the microphone is picking up your voice. Make sure you will not be interrupted and there is not too much extraneous noise from the street or a neighbouring classroom. As you give your presentation, try and address the camera directly.

If you plan to video an actual lesson, talk to the students in advance. Explain what you are doing and why, and confirm that everybody is happy to participate.

Editing

If you choose to edit your videos, first read the section above on editing screencasts. Single shot presentation videos need very little editing. If you decide to cut parts out of your presentation video or to combine shots made at different times and places, you should apply a transition to the timeline where one shot changes to another. The simplest and least intrusive transition offered by editing programs is the fade. You can also use this at the start to fade the image in and at the end to fade the image out.

The editing software allows you to adjust the volume of the audio. You can do this to the entire audio track or selected parts. For example, if you have videoed a class, you might need to increase the volume to hear the contribution of a softly spoken student.

You can use the editing software to add a title to the start of your video and instructions for your students at the end. For example, a presentation on the use of the present perfect to talk about recent events might finish with an on-screen, written instruction such as, “Be ready to talk in class about what you’ve done in the last week”. The advantage of putting this in writing rather than saying it in the presentation is you can quickly re-edit the video to remove or change such text depending on how you use the video.

Distribution

See the section above on screencasts for advice on sharing videos with your students.

Other tips

In a videoed presentation the presenter should look directly at the camera like a TV presenter. If you video an interview, sit right next to the camera and ask the interviewee to address you. Watch a few interviews on TV to see what this looks like on the screen.

If you decide to add music to your videos, avoid using copyrighted music, especially if you plan to upload your videos to a public place such as YouTube.

Interactive exercises

What do I need?

There are two principle ways to build interactive exercises.

The first, most accessible way, is to use an activity creation tool that provides templates into which you can enter the details of your activity and which then outputs an interactive exercise. There are plenty of websites offering this kind of service for free (the catch being you have to make the exercises you created available to everybody who visits the website) or for a regular subscription. Many platforms now have built-in tools for creating interactive exercises that can be automatically linked to tracking and grade book systems so you can see which of your students have done the activity and how well they performed. The students can also see their own scores or these can be shared with parents. Although this is a quick and easy way to create interactive exercises, you are constrained by the formats of the templates which may limit the type of exercise and content you can use.

The second way is to use one of several specialist e-learning authoring programs. These allow a high degree of freedom to design and build interactive exercises that meet your exact requirements. These programs are expensive to purchase and getting results from them involves tackling a learning curve that is steep enough to discourage a casual user. However, such an investment in money and time may be worth considering if you decide to produce a large quantity of closely specified interactive activities.

Where do I start?

The first step is to familiarise yourself with the range of common activity types available, appreciate how to use them effectively and be aware of the key considerations involved in writing for each activity type. As with all the other technologies discussed in this section, although some spontaneous experimentation and trial and error is inevitable as you are learning to master the technology, time spent planning and writing before you start to create is never wasted. However, before you start, spend some time trying interactive exercises from websites and CD-ROMs. Think about what works both in practical terms and what will interest and benefit your students.

Activity types

What follows is an overview of some of the most common activity types and advice on writing for each one.

■ Text entry

This type of activity is completed by the student typing text into boxes.

This can be used for gap-fill exercises in sentences or short texts, labelling a picture or diagram.

The student can be asked to type in the entire word. Alternatively, the first or a selection of the letters can be given and the student has to complete the word.

Most text entry activity creation tools allow you to specify several possible answers. You can allow alternative spellings such as UK and US or contracted and uncontracted forms such as do not and don't. However, on the whole, avoid writing questions which have more than one correct answer. You can guard against potential problems by providing a set of words from which the students choose the answers they type in. Also help students by being explicit and clear in your instructions about exactly what the activity is testing.

■ Drag and drop

This type of activity is completed by the student dragging a word or image to another part of the screen.

Words can be dragged to complete sentences or texts. Words and images can be categorised by being dragged into labelled boxes.

Sometimes the draggable items in an exercise are only used once. Another format allows items to be used more than once, for example, dragging prepositions to complete a text.

Feedback can be given instantly with a visual or audible indication that an item has been dragged to the correct or incorrect place or by configuring the activity so that incorrectly placed items flick back to their starting position. Alternatively, you can have a check answers button that provides feedback on the entire exercise.

■ Matching

This type of activity consists of two sets of items, often arranged in a pair of facing vertical columns. The student has to decide which item in the left-hand column matches which item in the right.

The matching can be done through dragging: selecting an item from one column then one from the other column or by dragging a symbol from one to the other to create a link.

This activity can be used for many exercises such as matching halves of a sentence, words with definitions, words with pictures, or recordings of words with their phoneme symbols.

When you write matching exercises, make sure that every item in the left-hand column only matches with the one item in the right. The activity will only allow you to give a single correct answer for each item. It is frustrating for students if there appears to be a correct answer that the activity refuses to acknowledge.

■ Re-ordering

In this type of activity, students move sentences, letters, pictures or words from a set into the correct order.

Items can be re-ordered vertically. This can be used for steps in a sequence, arranging words on a cline, or utterances in a dialogue.

Items can also be re-ordered horizontally. This is used most commonly in language learning exercises in which the student puts the words in a sentence or letters in a word into the correct order.

As with the matching activity, there can only be one correct answer. This means you must avoid sequences or sentences that have can be ordered in more than way. You can help with clues such as providing the first and last items or by putting a capital letter on the first word of a sentence and a full-stop or question mark after the last.

■ Multiple-choice

In this type of activity, the student chooses an answer from a selection of possibilities.

Most activity creation tools let you decide how many possible answers you give. These answers can be displayed as list of items. The student has to click on one or a button next to it. The answers can also be listed in a drop-down menu. The latter is more compact and is most often used when students choose words to fill in gaps in sentences or a text.

When you write multiple choice exercises, you usually want to have a minimum of three possibilities for each question. Some activity creation tools will only allow you to set one option as the correct answer. Others allow you to allocate different scores to each option. Make sure any incorrect answers – the distractors – are similar enough to the correct one to make the exercise challenging.

■ **Word search**

This type of activity works like a paper-based word search except the student uses their mouse or finger on a touch screen to trace out the words they have found.

Word search creation tools only require you to enter the words. The grid of the word search is then created automatically.

■ **Crossword**

A crossword activity provides the relevant clue when the student selects a numbered square. The exercise is completed by typing the answers into the boxes of the crossword grid.

As with the word search, once you have entered the words into the activity creation tool, the grid is created automatically. Although in this case, you also have to write a clue for each word.

E-learning courses

All the tools this section has looked at so far can be used to create digital materials, each item of which can be one element of a blended course. Software for creating e-learning courses can combine these elements into a sequence. These combinations can be as small as a single video accompanied by a couple of interactive exercises to practise listening or as large as an entire grammar course using audio, screencasts, text, pictures and exercises.

What do I need?

The range of e-learning course creator software on the market is reasonably large. However, many of the software packages are aimed at fulfilling the needs of big corporations and are designed to allow large teams of e-learning specialists to develop and implement myriad training courses for thousands of users across dozens of locations. Whether you buy it or, more commonly, lease it by the month, this type of software comes with a price tag to match the training budgets of these multinationals. However, if you want to dip a toe into this area, there are some web-based open-source programs that will give you a taste of what you can do with this type of program and the amount of time and effort required in both learning to use them and using them to produce materials.

Where do I start?

As emphasised in the discussions of the other tools above, learning to use the main features of your chosen software before embarking on a real materials project can prevent a lot of frustration. On the other hand, learning by doing and from your mistakes is as powerful a technique for mastering software as it is for learning a language. Therefore, choose something small and easy to conceive as your first project and be prepared to discover more than one way of building it.

It is very useful to look at existing e-learning materials. This will show you the range of possibilities offered by the software. Most e-learning development companies have a portfolio on their website and there are online communities such E-learning Heroes, sponsored by Articulate, where e-learning professionals share ideas and showcase their work.

You should cast a critical eye on such materials. Keeping in mind that e-learning is a form of self-study, ask yourself what is it about a piece of e-learning material that works and what does not and why. Pay attention to:

- How the student is expected to navigate the material – are the menus and buttons easy to find and use? Are there instructions on how to move through the materials?
- Whether the learning objective of the material is clear – what is the point of the material? Does it explain how it is important to the student?
- How information is presented – does the material use blocks of text, audio, video, pictures and diagrams? Is this presentation effective?
- Whether it works well on a variety of devices – are the information and exercises equally clear when viewed on a tablet or smartphone?
- What sort of interactivity is used – does the choice of interactivity fit the information and use? Are the instructions clear? Are there regular mini-tests and concept checks or just a big quiz at the end?
- Whether the material holds your attention – is the information divided into digestible chunks? Is there enough interactivity to keep the student engaged?
- Whether the material tests the learning objectives and how – is the content of any tests consistent with stated aims of the materials? Does the material really test students' understanding of any new information?

- What sort of feedback is provided and how it is delivered – does the feedback simply indicate that the student was right or wrong or does it provide guidance for getting the correct answers. Is the tone of the feedback supportive and positive?

As discussed above, before you embark on developing a piece of e-learning material, time spent planning in advance always cuts down the time spent building the material. One of the strengths of e-learning course software is the ability to link together multiple screens or slides. Therefore, decide what slides you need and the route that the student will take through them. This could be linear, offer options which branch off or you could give the student freedom to click around the material in any order they wish.

A huge time-saver is re-purposing existing digital materials. Presentation slides, audio, video, screencasts, pictures and diagrams can be imported. Existing quizzes and tests can quickly be turned into interactive exercises.

Trial your material before you integrate it into a course. Ask colleagues and selected students to try the material. Ask for their feedback based on the list above. Be prepared to make changes. Even if you spent days carefully creating an interactive exercise, if the feedback from users says they find it confusing, you need to change it.

When you have finished your e-learning material, your software will offer a range of formats in which to output it. What you choose depends on how you distribute the material and the devices on which your students are likely to view it. As always, it is better to test this before you integrate your new material into your course.