Manchester Metropolitan University

PRACTICE PAPER
Building Moodle courses that are accessible

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Abstract

The issue of 'accessibility' in educational settings can be very complex and difficult to define, particularly so in relation to the provision of learning, teaching and assessment resources online via websites or VLEs. This paper has two main aims; first, to highlight some of the main issues associated with provision of accessible learning, teaching and assessment resources in the MMU Virtual Learning Environment (VLE) Moodle, and second, to outline some basic and easy steps that we can all take to ensure that the learning, teaching and assessment resources and activities that we build in Moodle are as accessible to as many of our students as possible. The paper gives a flavour of the requirements of the two main pieces of legislation relevant in this context; the Special Educational Needs Disabilities Act (SENDA) 2001 and the Disability Discrimination Act (DDA) 2005. A good practice and accessibility checklist for Moodle course areas developed by CeLT for use at MMU is provided, together with a rationale and commentary. This checklist should not be regarded as a panacea for all accessibility solutions but provides a good starting point for colleagues aiming to ensuring maximum usability and clarity of purpose in their Moodle areas for all of our students.

Aims

Based on the workshop that we ran at the 2011 conference this article has two main aims:

1. To highlight some of the main issues associated with provision of accessible learning, teaching and assessment resources in MMUs Virtual Learning Environment (VLE), Moodle.

2. To outline some basic and easy steps that we can all take to ensure that the learning, teaching and assessment resources and activities that we build in Moodle are as accessible as possible to as many of our students as possible.

Introduction and background

The issue of 'accessibility' in educational settings can be very complex and difficult to define, this is particularly so in relation to the provision of learning, teaching and assessment resources online via websites or VLEs. Rather than enter into a lengthy discussion, we will simply align with colleagues at the University of Bath (2012) who define accessibility as:

> *"Ensuring your site (in our case a Moodle course area) can be accessed and is usable by the largest audience possible, regardless of disability or browsing technology"*

There are two specific pieces of legislation that are important in this context. The Equality Act (2010), and the Special Educational Needs Disabilities Act (SENDA) 2001. From 1 October 2010, the Equality Act replaced most of the Disability Discrimination Act (DDA 1995). However, the Disability Equality Duty in the DDA continues to apply. In the context of the legislation, a disabled person refers to:

> *"… someone who has a physical or mental impairment that has a substantial and long-term adverse effect on his or her ability to carry out normal day-to-day activities"*

The Equality Act (2010)

This definition would include students and staff with, among other things, physical or mobility impairment, hearing impairment, learning difficulties (e.g. dyslexia) and visual impairment. Some of these students and staff will access online resources using specially designed assistive technologies as an alternative or an enhancement to traditional web browsers such as Internet Explorer, Firefox, Safari, Chrome etc. These assistive technologies may include screen readers, screen magnifiers, voice-to-text translators. Texthelp, available to all staff and students on the standard platform, is an example of a text-to-voice translator, helpful to all users for proof reading documents as well as assisting those with dyslexia or visual impairments.

The Equality Act (2010) and SENDA (2001) are both complex pieces of legislation which we will not explore in detail here other than to highlight two important elements. Firstly, the legislation makes it clear that "*an education institution should not treat a disabled person 'less favourably' for a reason relating to their disability*" and secondly that this "*covers the provision of assessment and teaching materials*". The legislation requires universities to be "*anticipatory*" in relation to accessibility issues for disabled students (i.e. we must make plans to accommodate special education needs instead of simply trying to react on an ad hoc basis) and to make "*reasonable adjustments*" to ensure disabled students are not disadvantaged. The following checklist sets out a series of reasonable adjustments in anticipation of accessibility issues faced by disabled users of Moodle.

So who is responsible for ensuring that teaching and assessment resources in Moodle are accessible? The JISC TechDis advisory service on technologies for inclusion and accessibility has clarified this quite well.

> *"A common fallacy regarding accessibility is that it is the prime responsibility of learning support managers / disability specialists. In reality, providing learners with accessible learning experiences has to include everybody involved in creating and delivering resources - whether technical experts or teaching practitioners."*
>
> TechDIS (2012a)

In other words, we are all responsible.

For academics, one aspect of this is going to be about making the Moodle areas that they build as accessible as possible for a range of needs. But we'll start by asking an obvious question - is the Moodle system itself accessible? As it turns out, this is a trickier question to answer than you might expect so we'll leave it to the folks at Moodle to try. When asked this question by the TechDIS team, a key Moodle developer answered as follows:

> *"I don't think there is an 'accessible version' as such. Moodle is already accessible for a wide range of users and continues to focus on improving its accessibility, as well as its usability, security and pedagogic flexibility. None of these aims have obvious finish lines though each release is (hopefully) an improvement and so the next release should be more accessible/secure etc. I would be suspicious of anyone who claimed they were 'accessible enough' and had no further room for improvement."*
>
> TechDIS (2012b)

In short, as with all technologies there are problems, but importantly, the developers of Moodle are sensitive and reactive to the issues, there is an active Moodle accessibility forum, and ongoing improvements in accessibility are part of the Moodle development philosophy. Returning to the academic perspective the very fact that, in using Moodle, we are providing resources in digital format in an online form is in itself regarded as a positive step.

> *"The characteristics of the learning platform are only one aspect of the issue [accessibility]. The format and nature of the content is significant – digital content is generally more accessible - and indeed the very process of making content available to learners outside scheduled lessons aids accessibility"*
>
> TechDIS (2012a)

However, there are some simple and easy steps that we can all take when building our Moodle areas that can enhance the accessibility of our resources and activities. To this end, colleagues in CeLT have produced a Moodle course area good practice and accessibility checklist which, although not a panacea for all accessibility solutions, is based on the principle of ensuring maximum usability and clarity of purpose for all of our students.

The checklist is available in the Moodle Training Guides area, but a link is provided below: http://moodle.mmu.ac.uk/mod/resource/view.php?id=35943 (if you are not a member of staff of MMU click on *Log in as a guest*, and then enter 'Moodle Training Guides' into the search box to access the checklist).

Rationale for selections of the MMU Moodle Course Area checklist

There are eight sections to the checklist (see below). The answer to each question in the checklist should be "Yes". If the answer is "No" then it is suggested that this is addressed, i.e. corrected or a valid justification given. The rationale behind the items included in each section is, in terms of accessibility are briefly discussed here.

Checklist Section 1

In the main, at MMU, we will be blending the use of traditional face-to-face learning with our use of Moodle. It is however, important that our Moodle course areas standalone as much as possible. Simply telling your students in class that a resource can be found in Moodle or there is a task to do in Moodle (even if you show them) isn't always enough. Some students might miss classes for example; others just forget the detail of what you told them. This section of the checklist is designed to ensure that you provide your students with appropriate information within the Moodle area so that they can make sense of how to use it independently of what is done in the classroom. Put simply, your Moodle area should make it clear how and why students are expected to use it.

1. Instructions and expectations	Yes	No
• Does the course area alone make it clear to your students how to use the site and what you expect them to do from the first time they log in?	☐	☐
• Are the benefits of the site explained to your students?	☐	☐
• Is it clear to your students how the teaching team will make use of the course area to support teaching, learning and assessment?	☐	☐
• Does the site enable students to easily find supporting resources associated with teaching and learning (e.g. lectures, tutorials, seminars, practicals)?	☐	☐

Checklist Section 2

When students first access online environments they can often find them daunting and impersonal. This section is aimed at providing a welcoming environment and ensuring that appropriate support is available to your students. Making sure that the students know who is responsible for the Moodle area and where and when they can get individual help and support from their lecturers and technical support helps to build good working relationships with your students that foster engagement.

2. Support for students	Yes	No
• Is there a welcome statement introducing the teaching team?	☐	☐
• Are the contact details and availability of the teaching team easily available to your students (including staff office hours when they will be available to see students)?	☐	☐
• Is it clear to students who they should contact if they encounter academic and/or technical problems?	☐	☐

Checklist Section 3

As part of the deployment of Moodle at MMU, a design agency worked with colleagues in Learning and Research Technologies (LRT), the Centre for Learning and Teaching (CeLT) and Faculties to design and implement a Moodle template that applies consistent formatting to headings, text and hyperlinks in your Moodle areas. Headings emphasise to the reader how you have organised the content of your Moodle course areas. They also help to break up the text and make your page more readable.

Headings are particularly important in terms of accessibility. For example, students who are accessing your course area using a screen reader instead of a web browser like Internet Explorer (i.e. students with a visual impairment) can navigate your page more easily if it is logically structured using appropriate headings as explained in associated Moodle Guides. You will find more details about the Moodle template in the MMU Moodle Template Guide http://moodle.mmu.ac.uk/mod/resource/view.php?id=22980 (click on *Log in as a guest* to access the guide).

Furthermore, the text that you use for Topic or Week headings (depending on the settings you have chosen) is used in the quick links menu which appears at the top of the left hand column of your Moodle area. If you use too much text in your headings the quick links menu can become unusable.

3. Organisation and structure	Yes	No
• Are week/topic sections consistently named and structured using headings and labels that are appropriately formatted using styles provided by the MMU Moodle template?	☐	☐
• Are week/topic headings displaying correctly in the quick links menu?	☐	☐
• Are week/topic sections and any content that is currently under construction, or empty, hidden from students?	☐	☐

Checklist Section 4

This section of the checklist relates mainly to accessibility for assistive technologies. Screen readers, for example, can allow users to listen to a list of all of the hyperlinked text on a page (this is a form of skim reading). If the text on your page includes a hyperlink to the BBC web site as follows:

"To read an article on the BBC website about Global Warming click here*"*

When the screen reader, reads out the list of hyperlinks is will simply read out the text "click here". Obviously this provides the user with no indication about the content of the site that is hyperlinked. However, the text and hyperlink could be re-written as follows:

"Follow this link to an article on the BBC website about Global Warming*"*

In this case, the screen reader will be read the text "*an article on the BBC website about Global Warming*" which is much more helpful to the user in deciding whether to follow the link.

Another issue for users of assistive technologies is the opening of links in a new browser window. If the user does not know that linked pages will open in a new window (or tab in some newer browsers) their screen reader may stay active in the source window leaving them to wonder if the link is dead. This can easily be resolved by indicating that the link will open in a new window in the linked text. For example:

"*Follow this link to* an article on the BBC website about Global Warming (Opens in a new Window)"

4. Navigation	Yes	No
• Do links to files (internal and external to Moodle) and external websites:		
o Have meaningful text that indicates the content of the linked file or website (i.e. avoid the use of unhelpful text like "click here" for links)?	☐	☐
o Indicate where the file or website will open (i.e. in a new window)?	☐	☐
o Link to live files and websites (i.e. the links are not broken)?	☐	☐

Checklist Section 5

The main issue that is being addressed in this section is provision for students who suffer from dyslexia, although most of the items are also related to keeping the layout and the text clean, simple and easy to read for everyone. The general principles relate to consistent use of font styles, clean, simple, well-structured page layouts, good contrast between background and text (avoiding the use of background images), and providing resources in formats that users can manipulate (e.g. change text sizes and colours) to suit their particular needs. However, dyslexia is a complex and multi-dimensional condition with varying levels of severity and requirements.   These are far too numerous to go into detail here but useful information can be found at the following links:

Web Design for Dyslexic Users
http://www.dyslexia.com/library/webdesign.htm

TechDIS Dyslexia Advice and Guidance Sheet
http://www.jisctechdis.ac.uk/techdis/resources/detail/learnersmatter/Dyslexia_AGS

5. Readability	Yes	No
• Are consistent and appropriate text sizes and fonts used for headings and the main text?	☐	☐
• Does the use of any background colours, background images and font styles/colours aid understanding and/or add value to the content?	☐	☐
• Where background colours, background images and font styles/colours are used, are the colour combinations appropriate and is the text legible?	☐	☐
• Is any use of underlined, bold or italicised text contributing to the understanding and readability of the text?	☐	☐

	Yes	No
• Are paragraph breaks, indents and white space used appropriately to aid the readability of the page?	☐	☐
• Does the inclusion of any graphics/images (.jpeg, .gif, .png etc.) or animations aid the understanding and/or readability of the content?	☐	☐

Checklist Section 6

Providing interactivity as part of your online provision is regarded as a good way of encouraging engagement. However, it is very important to explain to your students within the Moodle area what they are expected to do and why they are expected to do it. As with section 1 of the guide, this is about ensuring that your Moodle areas are to some extent standalone. This should allow students who miss classes or who forget what you have told them in class to independently pick up what they are required to do in Moodle.

6. Interactivity	Yes	No
• Where interactive activities (e.g. discussion forums, quizzes, assessments, chat tools etc.) are provided, are explicit instructions provided and expectations set?	☐	☐
• Is it clear to students how and when they will receive feedback on interactive/formative activities (e.g. quizzes and in-course assessments)?	☐	☐
• Is it clear to students how any communication, collaboration and social interaction tools should be used and will be supported by tutors?	☐	☐

Checklist Section 7

This section is mainly about joining up the use of Moodle with your face-to-face teaching. If you are providing online resources in Moodle to support your teaching, you need to ensure that your students will be able to make sense of them and be able to access them in an appropriate time frame. For example, if you want to provide lecture notes to your students in advance of your lectures you will need to ensure that you make them available in plenty of time for your students to print them out. You will have to talk to your students to find out how long before the session they need to print things out. You also need to ensure that you make the notes available in a format that the students can download - i.e. if your students only have access to Microsoft Office 97 they will not be able to open Microsoft Office 2007 or later versions (.docx) materials. Furthermore if you are making Microsoft PowerPoint slides available that include lots of images and are consequently large files, some students who do not have broadband internet connections may not be able to download them.

7. Formats	Yes	No
• Are any online documents/resources that you have created been written appropriately for reading online (e.g. avoiding long blocks of on screen text)?	☐	☐
• Are lecture notes and handouts provided in an appropriate electronic format, so that they can be downloaded, printed, annotated and edited as required?	☐	☐
• Are documents that you anticipate your students will open, print or edit,	☐	☐

provided in formats for which students have easy access to appropriate software?		
• Are documents which support face-to-face sessions made available to students in advance of the session in an appropriate time frame?	□	□
• Are any files that are linked to for download purposes, of an appropriate size that can be easily and quickly downloaded off campus?	□	□

Checklist Section 8

Most of the issues in this final section are aimed at enhancing the use of the Moodle area and resources in it by assistive technologies. To a screen reader, a standalone image, included in a page, provides no information to be communicated to the user. In normal web pages this is done by including 'alt' tags (descriptive text) that communicates something about the content of the image. You can see the content of an image's alt tag on a web page by moving your mouse pointer over the image. In the example on the left, the alt tag contains the text "*A Dandelion seed head*" (this has been displayed when the mouse pointer has been rolled over the image). Although a screen reader cannot make sense of the image itself, it can read the 'alt' tag text to the user enabling them to make sense of the image.

Figure 1: An example of an 'alt' tag for an image

When adding images to resources and activities in Moodle, we are required to include text for the 'alt' tag. It is important that you make this text as meaningful as possible so that it communicates the content of the image to users who may not be able to see it.

It is becoming increasingly common to make video and audio recordings available in Moodle course areas. Here we need to remember that students with hearing impairments may not be able to make use of them. If the content is essential to all of our students we need to make sure that we provide the information contained in video and audio recordings in a different way. This may include technical solutions such as adding text captions to video recordings, requiring specialised video editing software or more simple solutions such as providing a text transcript of the video or audio recording. It is also helpful to assistive technology users to know if downloadable resources will open in a specific piece of software. For example, if you provide a link to a set of Microsoft PowerPoint slides with the text "Week 1 Lecture Slides" there is no information to the user that this link will open in the PowerPoint software and the assistive technology may not automatically be redirected into PowerPoint so the user is left wondering is anything has happened. If the link to the PowerPoint slides used the text "Week 1 Lecture MS PowerPoint Slides (Opens in a New Window)" even if the assistive technology does not

redirect to PowerPoint the user will know what to look for. This is all about providing users with adequate information to aid their use of assistive technology.

8. Multimedia	Yes	No
• Do all graphics (images) have meaningful text descriptions ('alt' tags)?	☐	☐
• Where audio/video files have been used are text based alternatives/transcripts available if required by students?	☐	☐
• Is the format of specific file types (e.g. MS Word, MS PowerPoint, .exe files etc.) that are linked to for download purposes made clear to the users?	☐	☐

Summary

The checklist that we have developed will by no means address every accessibility issue faced by students with specific learning needs. It is essential that we have good mechanisms in place for students who encounter problems accessing and using Moodle to make these known. Perhaps more importantly, it is essential that we enable rapid resolution of such problems as they arise. This requires good channels of communication between students, programme teams and support agencies in the university. It is the responsibility of each of us to ensure that these channels of communication are open and effective. In the meantime, by ensuring that we address any issues raised in working through this checklist, we will have taken the first steps to ensure our Moodle areas can be accessed and are usable by the largest audience possible, regardless of disability or browsing technology.

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