

PebblePad Accessibility

Overview

One of the reasons PebblePad was developed with a Flash user interface was its potential for the highest possible level of usability - a fundamental aspect of accessibility. Although usability is often sacrificed to accommodate accessibility sometimes creating systems which are technically accessible but challenging for all users, our overriding design brief was to create a very usable learning tool.

Our own experience of working with users with a variety of individual needs is that it is easy to focus on the technical solutions to accessibility without providing an overview of the purpose and general structure of the system. PebblePad is a complex tool which allows users to record, store, share, aggregate and publish artefacts and evidence-based websites. Without a good understanding of the purpose, functions and general structure of the system a user can be left tabbing around the interface without any real understanding of what they are trying to achieve.

The following document focuses on all the different aspects of accessibility we have in PebblePad and includes helpful user guides for getting the most out of the features we provide.

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Accessibility for all

A number of institutions have reported success using PebblePad with dyslexic learners. Sometimes the success is attributed to the interface; sometimes to the scaffolding which helps learners structure their entries, and sometimes to the ability to organise the presentation of work in non-linear ways.

The unique interface overcomes some of the challenges of complex webpages which are traditionally a problem for Dyslexic users when using the internet. The interface can be tailored to suit the individual needs for any user including customisable text size, font style, background colours in both the main interface and the recording wizards.

The different record types within PebblePad are structured to guide the user through recording their entries in a clear but comprehensive way. The feedback from institutions had been that many Dyslexic users find the structured nature of the PebblePad fields is helpful for organising their thoughts.

Additional context specific help is also available throughout these records to clarify and support the user experience. It is possible for administrators to change the instructional text within PebblePad from simple key word changes to all labels and contextual help.

Some users find that pictures are useful both to break up text and as visual aids to comprehension. PebblePad uses icons to indicate different aspects of the program, creating visual clues for the user. All icons have alt text which is screen-readable. PebblePad also repeats common processes throughout the system for: adding list items; opening blinds; ordering information and moving between pages.

It was always really important to us to develop an easy to use system where all users could carry out complex activities (i.e. building webpages) without developing complex technical skills. It was equally important that the system should be as customisable as possible to help personalise the use of PebblePad: in settings users can fully customise all visual and coloured aspects of the program.



- There are seven fonts a user can choose including, Verdana, Arial, Comic Sans, Courier, Helvetica, Times and Trebuchet.

- There are three different font sizes roughly translating to 10pt, 12pt and 14pt. Although these can appear larger depending on the selected screen size. For instance on a 20 inch monitor running a resolution of 1024x768 with large text and the large screen size selected, will display text equivalent to around 20pt.
- There are fifteen pre-designed colour sets for the pads and an additional 4 which are designed specifically for users requiring high contrast accessible colour schemes. There is one pad option which is fully customisable so even the most specific colour requirements can be catered for.
- There are a selection of animated interface themes as well as a basic theme which provides large buttons on a plain background.

An Introduction to our screen reader approach in PebblePad for Visual Impaired Users

Why develop a bespoke screen reader?

We developed PebblePad to work with the JAWS screen reader as this was one of the only screen readers which claimed to work with Flash but after a year it became apparent that we were facing an uphill struggle. It is true that for simple flash applications/websites JAWS can do a very good job. However for more complex systems with a continually changing screen layout and intensive form completion, developing (and maintaining updates) for JAWS was a near impossible task. It became clear to us after consultation with the RNCB (Royal National College for the Blind) that this approach was not going to work for PebblePad.

The RNCB suggested that we look into self voicing our software but due to the user input and vast amounts of text this would be impossible to upkeep. They also suggested the use of Text-To-Speech and mentioned some providers which we could look into. Unfortunately these lacked the flexibility we would need and so after researching this technology we began writing our own system for delivering text-to-speech audio on demand, in place of a traditional screen reader.

Advantages to using our own TTS engine

By using our own TTS we have total control over the way items are read out and the information that the user gets when using and navigating the system. We have tried to keep some of the basic principles of using a screen reader in our approach. For instance all buttons have the word “button” read out after their descriptions; text form inputs are always read out as “text input field” and are followed by any text in the field. Key strokes are all spoken and there are a variety of shortcuts to speed up use and navigation.

As we have total control over every action, popup message and key stroke, we can give the user as much feedback as possible to make using the system straight forward and intuitive.

One major difference between our approach and a normal screen reader is that the TAB key is the main navigation tool within PebblePad. A normal screen reader user will be used to using the arrow keys to navigate around, but in our software the arrow keys are only used when explicitly instructed by the TTS. This is because in Flash the arrow keys don’t always follow the assigned tab order which can make navigation less predictable. Some form elements such as radio button groups and lists do however require the arrow keys but this is always indicated to the user.

As with most new pieces of software the user will need to get used to working with the system. Once familiar with shortcuts and key strokes using PebblePad should be simple and intuitive for all users.



Accessibility and usability

It was really important for us to make sure that PebblePad was as usable as possible for visually impaired users. When developing this approach it became obvious that something which is classed as accessible may not be usable. It would have been easy for us to do a HTML version of the software and told visually impaired users to use a standard screen reader. This would of course been classed as accessible but using our own approach allows us to give so much more guidance and feedback to the user.

We continued to work closely with the Chartered Society of Physiotherapists to improve and develop further our text-to-speech accessibility. It has been very well received by their sight impaired users who use PebblePad's inbuilt system in conjunction with JAWS or other tools for non Flash applications.

Although we are confident that this is now a fairly usable system for VIP's we are always looking to improve user experience. Feedback from users and trainers is a very valuable part of our development.

PebblePad Keyboard shortcuts for VIP accessibility

Key Shortcut	Action
Tab	The tab key is used to navigate PebblePad. Normal screen reader users will be used to using the arrow keys for navigating pages but within PebblePad only the Tab key is used. Using the Tab key only, ensures you follow the carefully structured paths that guide you through the forms and navigation.
Control + F3	Gives you a pop up box which details all the shortcuts
Control + M	Toggles between beginner and advanced mode
Control	Interrupts speech
Control + home	Gives you an overview of the screen areas available.
Control + full stop	This is a toggle function and moves between the different menu screen areas.
Control + comma	Reads out the currently focused item information.
Control + /	Reads out any available hint help associated with the currently focused item. Not all fields have hint help
Control F8	Reads out all or a selection of user inputted text.
Escape	Closes the popup dialogue box if it is currently visible on screen
Control + left arrow	Reads a word to left of cursor
Control + right arrow	Reads a word to right of cursor
Right arrow	Moves character right
Left arrow	Moves character left
Up arrow	Reads previous line
Down arrow	Reads next line
F5	Refreshes the page if it freezes

Additional Information

You will be required to switch to your own screen reader to access external parts of PebblePad. For example the html view of an asset. This is always clearly indicated before you are required to do this and you will never be spontaneously left without voice support.

To make navigation the best it can be sometime we have changed the wording of items and occasionally the order items read out may be different from its visual representation on screen. This is to provide the best experience for visually impaired users.

Where ever the screen changes or we want to make the user aware of buttons or information we use the phrase “press tab to continue”. This is a handy way of informing users that they can move on to other items within the interface. So all popup messages which automatically readout are finished with “press tab to continue” this is so the user knows that the system is ready for them to move on to the message buttons.

Tabbing Tips and Hints

General Information

When you are using tabbing to navigate PebblePad there are some really helpful features to make usability as easy as possible. There are some things which need to be explained about the accessibility within flash to enable you to have a better understanding of how things work.

The first of these is how tabbing is done and represented within flash. Firstly although you can use the arrow keys to move through tabable items within PebblePad the order the arrow keys move through the items is not necessarily the one that has been designed for PebblePad. For this reason tabbing within PebblePad is always done with the tab key to ensure you are following the carefully structured paths that guide you through the forms and navigation. Shift tab is used to go backward through the tabbing order. So if you were to over shoot the item you need shift tab will take you back without having to tab around the entire order again.

When tabbing you will notice a yellow focus rectangle which highlights which items have focus. Please note that for Flash components, i.e. list boxes, text fields, date fields and accordions, the focus rectangle is green. These are the way that flash is designed handle focus and is not something which Pebble has been able to specify. List boxes and date fields which highlight in green are an exception to the tabbing rule mentioned previously and once highlighted are navigated using the arrow keys.

To activate buttons whilst tabbing through PebblePad you can press the Enter key. If you are selecting an item for example something in a list or a radio button spacebar can be used.

Shortcuts and keystrokes for Navigating PebblePad

There are many shortcuts for using accessibility in PebblePad. Quite a lot of these help with readout and navigation when using the inbuilt screen reader; please see the tip sheet for visual impaired users for further information on this topic.

Below is a table of shortcuts for keyboard users, designed to make navigation and use easier.

Ctrl + Fullstop	This moves between menu areas on screen.
Escape	Closes popup messages which have a clear cancel or close option on them.
Combo boxes	Combo or dropdown boxes which are themed to match PebblePad are navigated with the tab key. For example the tags combo box when you create assets. Flash component combo boxes which highlight in green are navigated with the arrow keys, for example the template combo box in the webfolio asset.
List boxes and data lists	List boxes which highlight in green can be cycled through using the up and down arrow keys. To select an item you can use the spacebar. This is also the way you would navigate data lists for example the main asset list in your assets.
Radio buttons	These can be selected using the arrow keys.
Checkboxes	These are selected using the spacebar.
Date fields	Use the arrow keys to move through the dates, hold down Y and use the right and left arrow keys to change the year. Please note the date field does not therefore open in order for you to select a date.
Popup Menus	These are the send to and more menus on the last pad of the asset forms and on the overview pad when viewing your assets. To make sure that menu items aren't missed by keyboard only users we automatically open and allow the user to tab through these menus. They are then closed when the user tabs off the last item onto the next item on the page.

Frequently Asked Questions

I can't seem to be able to tab all parts of PebblePad, how do I tab to other pads and areas?

As there can be a large number of tabable items on screen at any one time, screen areas are used to group together sections of tabbing. The home pad and the main pebble navigation for example. By holding down ctrl and pressing full stop users can jump about the interface and continue tabbing on different screen areas.

Is there a quick way of deleting my assets without having to tab all the way through the overview pad?

By selecting an asset with the enter key in your asset grid you can then press the delete key to remove the asset quickly without having to tab through all the menus.

If I tab too far, how do I go back?

If you find that you have tabbed past the item you wanted by holding down shift and pressing tab you can go backwards to get to the item you passed.

How do I edit CV information within a CV asset using the keyboard?

There are some shortcuts which have been added to make editing CV sections easy for keyboard users. Pressing spacebar on a selected section selected and deselects the section for use in your CV. Pressing equals opens up a pad so you can edit that section information. Minus selects and deselects the "keep section updated" checkbox.

After viewing gateways, how do I return to PebblePad?

In most browsers pressing Ctrl and W or Alt and F4 will close gateways and return you to PebblePad. If this does not return you to PebblePad, holding down Alt and pressing tab in Microsoft Windows will cycle the available windows and allow you to find PebblePad.