Tools for adding Answer Boxes (Form Fields) to PDFs

We have been using Acrobat Pro to create, edit and add form fields to PDF assessments and exams for many years. It costs schools about £60 per licence plus £20 for the media under a special licensing arrangement from Education Scotland or from educational software suppliers such as Pugh.

However, there are now some alternatives and so we have researched these options and this quick guide summarises some of the tools currently available.

PDFescape (http://www.pdfescape.com/, free or $20 year subscription)

PDFescape is a browser-based PDF editor that also has a facility to insert form fields (answer boxes). The free service lets you upload a PDF, do simple editing, add form fields, and then download back to your computer. The PDF can then be accessed by learners on computer using for example Adobe Reader, or on an iPad.

Inserting form fields is straightforward but entirely manual – there is no automatic form field recognition as provided by some of the other editors. Text, check (tick), radio, list and dropdown fields can all be inserted. Some limitations are:

- The answer boxes do not have coloured borders so you cannot give them the red border that is used by SQA. This also means that they are invisible to the user unless the 'Highlight Existing Fields' feature is activated by the user in Adobe Reader.
- The answer boxes do not have a colour fill option – they are transparent so if your PDF has handwriting lines they will show through – unless you use the editor to draw in a white box to cover them up.
- You have to set the properties of each field when you create it – you can't set default properties - which is slower than setting default properties for all your fields.
- You can't turn off the spellcheck in the answer boxes.

PDFescape has got two significant advantages: it is free and/or cheap, and since it is browser-based, you don't need to install any software on your computer.

It looks like a possible option for adding answer boxes to PDFs of classroom resources and internal assessments, but for prelims you need to be able to disable spellcheck and create papers with red answer boxes like the SQA digital papers, and this requires Acrobat Pro or one of the other editors. Also the free version only lets you store 10 files on the PDFescape server, with a maximum size of 10 MB, and

Figure 1: PDFescape

deletes inactive files automatically after 7 days. You can of course save the completed PDFs to your computer but when you upload them again to PDFescape, you can't edit the fields you created
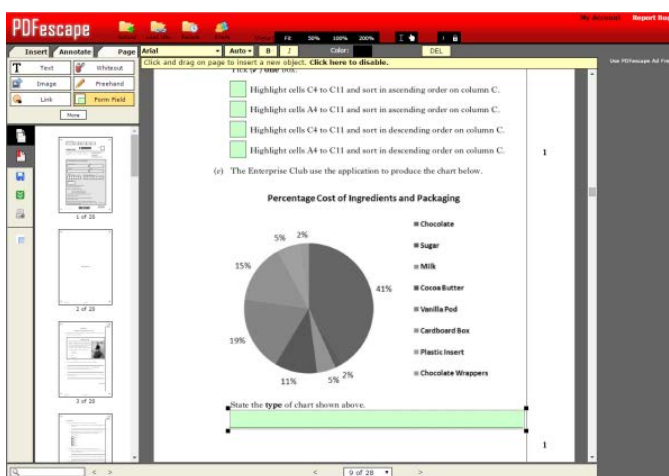
(although you can insert new ones.) The Premium subscription service has a maximum file size of 20MB, stores 100 files and deletes inactive files after 30 days.

PDFescape lacks a lot of the features of the other editors, such as scanning and text recognition, page numbering, setting tab order of answer boxes, etc.

In summary, you will still need Acrobat Pro or another editor to create papers that look like the SQA assessments. A cost effective workflow might be for subject staff to create papers with free PDFescape and then pass them on to be finished off with Acrobat Pro.

Verdict: a good tool for making class resources, but we think you need Acrobat Pro or similar for creating prelims.

PDFFill (http://www.pdfill.com/, $19.99)

PDFFill is a low cost (about £13) alternative to Acrobat Pro and provides facilities for creating, manipulating and editing PDFs, and also for adding form fields. You can download a free trial copy which is not time limited, but it adds a 'watermark' across any PDFs you create.

PDFill can create a PDF from most applications including Word, and can also open a scanned PDF, but it does not have OCR to convert the scanned page to readable, editable text.

PDFFill has tools for inserting text, tick (check) boxes, radio buttons, combo boxes, list boxes, and push buttons – all the field types that Acrobat offers. For digital exams, you just need text and tick boxes. PDFFill lets you set the field border and fill colours; set fields to be single or multiple lines; and turn spellchecking on or off. You can use a Form Table Tool to create multiple copies of fields.

PDFill does not have a facility to automatically detect form fields, unlike Acrobat Pro, so you have to draw in all your fields manually.

Students need Adobe Reader XI on their computers to save answers typed into form fields – with older versions of Adobe Reader you can type your answers in but you cannot save them.

On an iPad you can use apps like Adobe Reader, ClaroPDF and PDF Expert to access the files.

Figure 2: Drawing answer boxes with PDFFill

In use, PDFFill feels quite like a cross between Word and Acrobat and in some ways is slightly easier to use than Acrobat because there is no 'Form Editing Mode' – you can click and drawn a form at any time.

As you work, you save your PDFill file as a 'PDFill project' and then once you are finished, save the document as a PDF for students to access using their PDF reader.
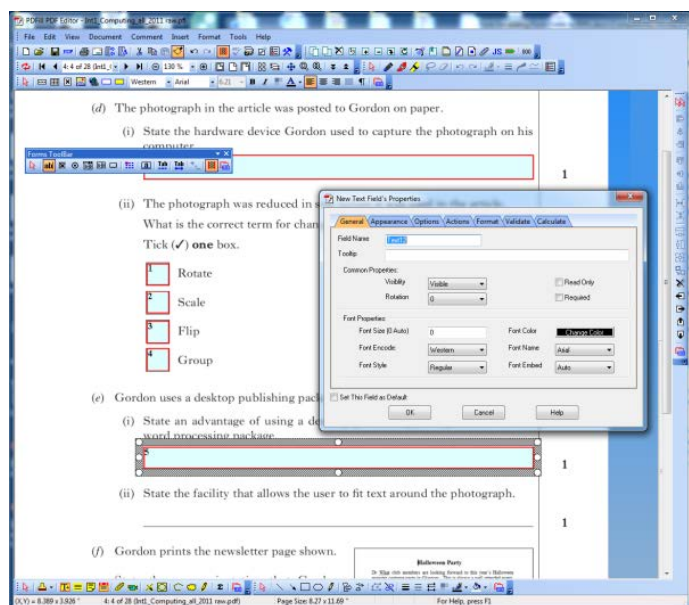
 Verdict: a basic tool for creating PDFs with answer boxes that look like and have like SQA digital papers. Acrobat Pro, PhantomPDF and PDF Office do offer more facilities (e.g. scanning and OCR) – if you need them.

Foxit PhantomPDF Standard 7, http://www.foxitsoftware.com/, $75.65

FoxIt PhantomPDF is similar to Adobe Acrobat in that it can create and edit PDFs and also insert form fields. Foxit offer a 15% discount for education bringing the cost down from $89 to $75.65 (about £48).

PhantomPDF can create PDF files from most applications including Word. Like Acrobat, it can scan directly and convert the scanned pages to editable, readable text.

Like Acrobat Pro, PhantomPDF has automatic form field recognition that attempts to recognise and insert answer boxes in the correct location on the PDF. This can save time when creating your interactive assessments, but in our test paper, PhantomPDF did not recognise as many fields as Adobe Acrobat – it did not insert any on the front page of the paper, and on the page to the right, it only added 2 out of 4 fields, and placed one large field in quite a strange place.

Also, you cannot 'select all' to change the properties of all the fields in a paper, although you can use the 'Manage Form Field' view to view and click on multiple fields and then change all their properties to save changing them one at a time.

PhantomPDF has the same set of form field types as Acrobat: text; tick; radio button; push buttons; combo and list.

A nice feature is that you can click on a box (for example, a tick box) and PhantomPDF will automatically insert a field, and this saves a great deal of time – it is quicker than drawing a tick box by hand and then creating multiple copies with Acrobat. However, it usually only works for fields in boxes - it does not add a text field when you click on a horizontal guideline, which of course form the majority of answer fields in the digital paper.

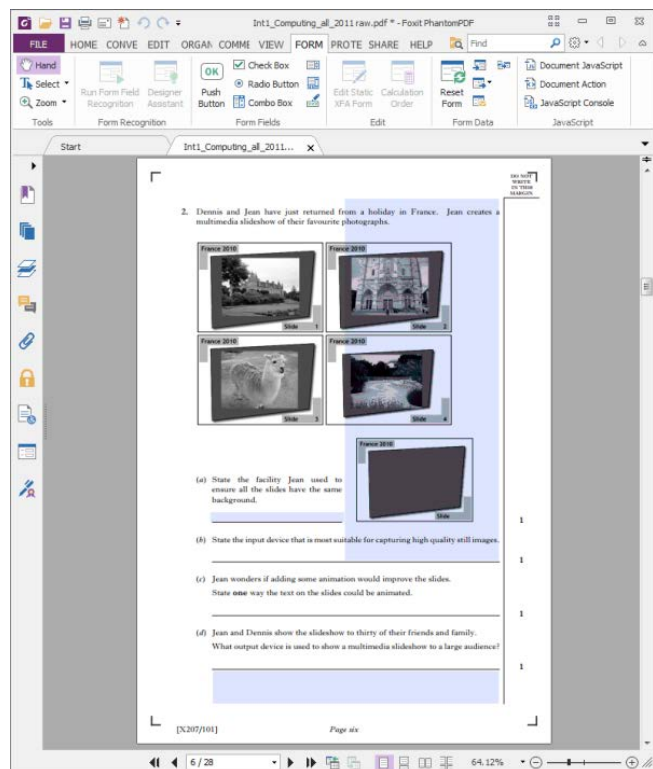**Verdict:** PhantomPDF is a viable alternative to Acrobat Pro for creating digital assessments.

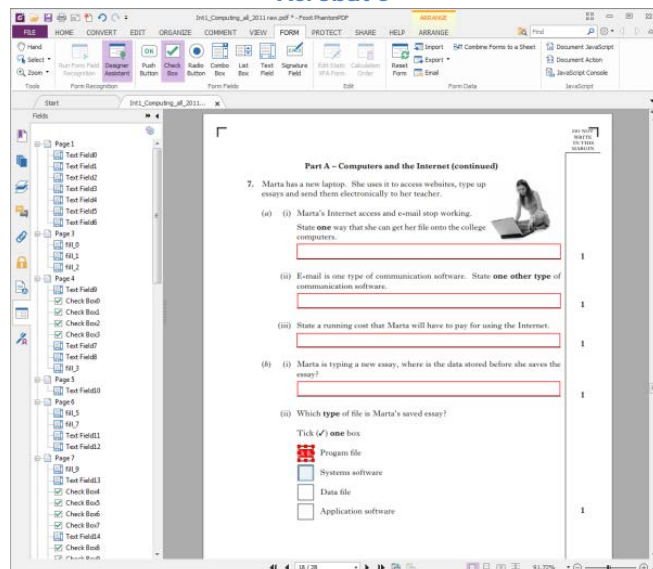**Figure 4: Form field recognition is not as good as Acrobat's**

Figure 3: Click to add a tick box

LibreOffice (http://www.libreoffice.org/, free)

LibreOffice is a version of the free OpenOffice Suite – an open-source equivalent of Microsoft Office. It provides most of the functionality (and sometimes more functionality) of Microsoft and you can open and save files in the various MS Office formats.

You can use LibreOffice to open or create a Word file and then add form fields: when you save the file as a PDF, these are converted into PDF answer boxes.

Use the Forms Toolbar to insert text and tick boxes. Fields must be drawn by hand, and the properties set each time – it does not seem to be possible to set default properties for fields – which does take longer than the PDF editors. You cannot set the font size in text fields to be automatic, so it should be set to 12 or 14 pt. Other suggested settings for text boxes are:

Figure 5: Inserting Form Fields with LibreOffice

- Anchor = To paragraph;
- Border = flat; Border colour = red;
- Text type = single/multi-line;
- Font = Arial 12/14.

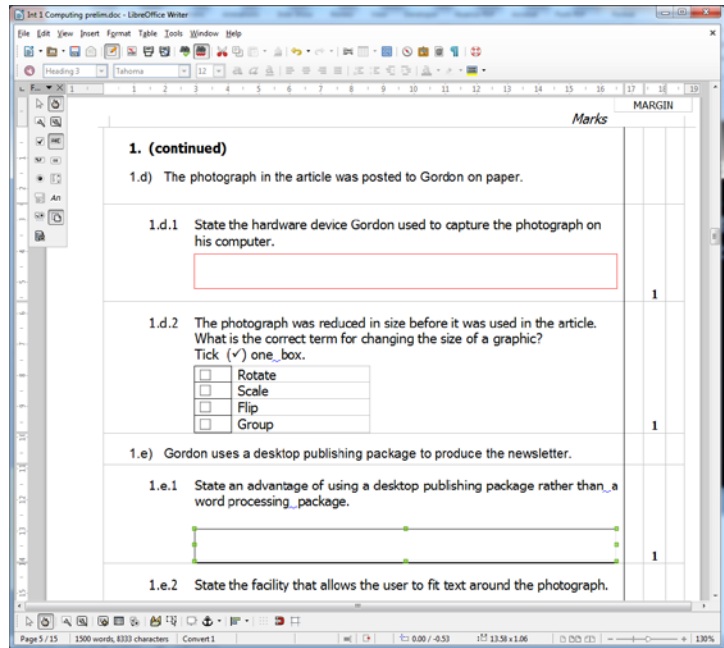We could not find a way to re-size or set the border colour of the tick boxes, and again the properties had to be set for each field. Also, in the resulting PDF, the tick boxes display crosses rather than ticks.
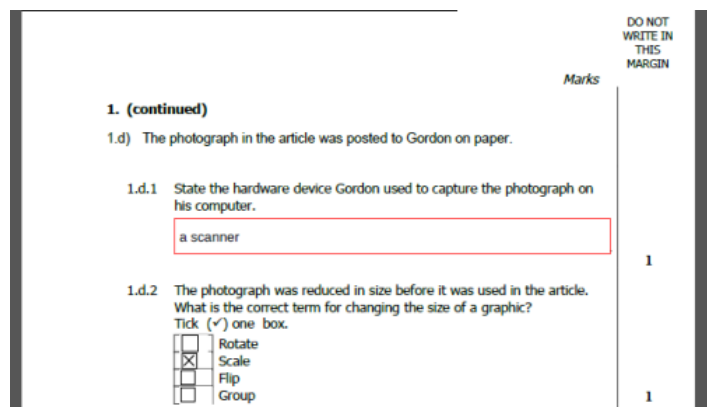

Figure 6: DQP with answer boxes created with LibreOffice

Verdict: LibreOffice is free and it useful to be able to both design the assessment and insert the answer boxes using the same application. However, the process of adding form fields is slower and more cumbersome than the PDF editors, and the answer boxes do not look or behave the same as the SQA digital papers.

PDF Office on iPad (from £3.99)

PDF Office is a new app that lets you create digital question papers and prelims on your iPad. It's the only app we have found that lets you draw in answer boxes to a PDF.

PDF Office lets you open a PDF, do small edits to the text and add drawings and other annotations, and most importantly, you can insert form fields for answer boxes. There is a form field detection feature that adds fields automatically for you.

It also has a facility for converting Word files to PDF, but I found that it did not seem to maintain the original Word file's appearance accurately, so you are probably better converting your Word files to PDF using the Word 'Save as PDF' facility.

You can take a photo of a paper and convert it to PDF (but it can't convert the image to actual text, so you would want to use a text recognition app such as ReadIris or Prizmo to create the readable PDF first).

In testing on my prelim paper, I found that it works very well: it even detected the difference between a field where I wanted a tick box, and other fields where I wanted text boxes. (This is better than Acrobat, which puts text boxes into tick box fields that you then have to delete.)

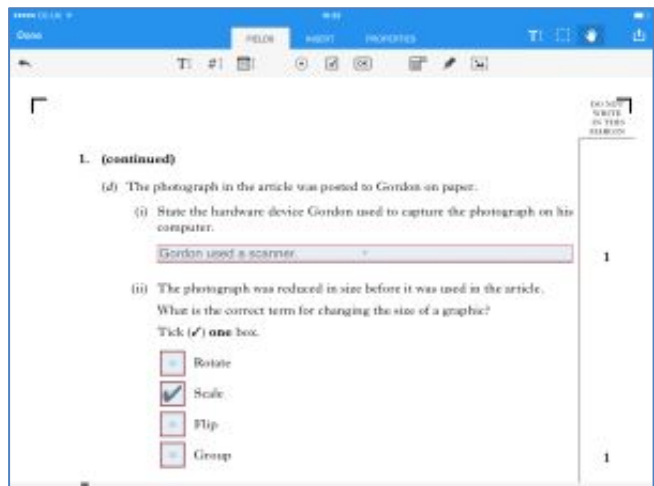You can change the properties of the fields to make them look like the SQA Digital Question

Figure 7: Adding answer boxes with PDF Office

papers, i.e. red borders, multi-line where necessary. I couldn't find a way to select all the fields in the whole paper to make these changes once, but it was easy to select all the fields on one page and set the properties for that page.

You can draw in fields for text, tick boxes, numbers, date, radio buttons, action buttons (e.g. send by email), drop-down lists, and image fields for users to insert photos from the camera. You can tap on a field and duplicate it, which gives a faster way of inserting fields.

You probably want to use a stylus rather than your finger, to get accurate positioning (although it 'snaps' to other fields that keeps things nicely aligned), and I actually found it slightly easier and quicker than using a mouse on a computer.

The completed PDFs can be accessed and completed by students on iPad using apps like Adobe Reader, ClaroPDF and PDF Expert, or on a computer with Adobe Reader or Foxit Reader.

The app is free, but to use it productively you need a subscription which is quoted at £3.99/month or £29.99/year. However, when I installed it, it gave me a free year's subscription **for nothing** because I already had PDF Expert, one of Readdle's other apps, on my iPad. PDF Expert costs £6.99, so for just £6.99 you can get both PDF Expert, which is an excellent tool for reading, editing and managing PDFs (and typing into your completed Digital Prelims), **and** a year's worth of making digital prelims and resources on your iPad.

Verdict: a great tool for adding answer boxes to PDF on your iPad.