

A Practical Guide to Materials Design in the Paperless Language Classroom

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Teacher-made materials form an important part of many second-language classrooms. In recent years, there has been a shift to paperless classrooms, and this has had an effect on how teachers create materials for their classes. Whereas in the past, teachers could rather easily design paper-based activity worksheets for students to complete in class, the current shift to digital materials has created challenges both in how teachers design materials and in how students interact with those materials. Teachers must now give consideration to how digital materials are displayed on students' devices, to the software that students have access to, and to how materials can be most easily designed within the limits of the teacher's current technology skillset. In this paper, we introduce the idea of designing materials as PDF files that contain fillable forms. We provide a detailed guide for teachers who are interested in implementing this simple-but-powerful technique into their materials development.

Key Words: Teacher-Made Materials, Materials Design, Paperless Classroom, Fillable PDFs

Introduction

Teacher-made materials are one of the key components of many language-learning classrooms (Richards, 2001). An individual teacher might use their own materials to supplement the instruction presented in a textbook, to add or alter exercises and activities, or to provide more authentic or relevant content to a particular learner group. At the level of a language program, the use of teacher-made materials might even substitute the use of commercial textbooks when appropriate. According to Richards (2001), the advantages to a program using its own materials are that 1) the materials can be made more relevant to the students' needs, 2) teachers can develop valuable expertise in materials development, 3) the program can enhance its reputation by showing its materials

have been developed specifically for its students, and 4) the materials can be updated or revised as needed.

Recently, many schools and language programs have shifted to "paperless classroom" policies, which generally limit the use of paper within the classroom in favor of computers and other digital devices. This has coincided with an increase in the use of learning management systems (LMSs), which are online software systems designed to manage many facets of the learning process, such as the delivery of materials and the tracking of assignments. Whereas the language classroom of the past would often involve students working together to complete paper handouts for a variety of activities, the modern language classroom often consists of students interacting with each other while referencing materials on their computer screens. This has created a number of benefits and challenges

for teachers and language programs that rely on teacher-made materials.

One of the benefits of the shift to a paperless classroom is that there is an increase in the efficiency of learning (Shonfeld & Meishar – Tal, 2017). Teaching materials, assignments, and exams can be organized efficiently through the LMS so that students can find them easily and can access them outside class. In addition, teachers and students can communicate more efficiently through the LMS, and teachers can monitor student progress more thoroughly. Another benefit is that students can take a more active, self – regulated role in learning. It becomes the responsibility of the students to access the learning materials through the LMS, and they have more freedom to interact with the materials at their own pace.

Conversely, one of the negative points of the paperless classroom is that students can easily become distracted by their digital devices (Shonfeld & Meishar – Tal, 2017). Teachers must expend energy monitoring students and ensuring they are working on their computers as intended, rather than browsing the internet or chatting with friends. Furthermore, the reliance on computers means that technological problems can create a major hurdle to learning, and both teachers and students must devote time to troubleshooting such problems.

A further negative point of the paperless classroom is that teachers and language programs have had to revise how they design and use teacher – made materials. In the past, a teacher could easily use commercial word processing software to design the types of materials and activities that are the foundation of many language classes, such as a find–someone–who interview, an information gap activity, a series of grammar exercises, a roleplay scenario, and so on.

These materials could be designed in whatever way the teacher was comfortable with and then printed for use by students. However, in the paperless classroom, there are a number of problems that may arise if the teacher distributes such materials digitally to students.

In this article, we will consider some of the limitations to commonly-used methods for the design of teacher-made materials in the paperless classroom. After that, we will propose a simple way of creating digital materials that resolves many of these limitations: the use of fillable PDF files. We will provide a walkthrough of how to create a fillable PDF, and we will consider some of the design principles that should be observed to make the process easier.

Methods for Designing Digital Materials

An important aspect of teacher-made materials for language classrooms is that they often promote student engagement by requiring some form of written input. This may differ from non-language classrooms, where materials are often instructional in nature and do not require student input. Many language classes, for example, use a partner – interview activity to have students practice particular speaking skills. For this activity, students are given a handout that has a table containing a list of interview questions. Students interview a partner and write the partner’s answers on the handout, and then they change partners and repeat the interview. The use of a handout this way gives students a goal to complete, making the speaking task more meaningful. Therefore, being able to easily input information is an important factor in deciding how to design materials.

Perhaps the easiest way to design and deliver materials to students is directly through an LMS. Many LMSs, such as Google Classroom (edu.google).

com), have the ability to publish blog-like webpages that can contain text, images, and other media. One advantage to building materials directly within the LMS is that, in many cases, students are already familiar with how to use the LMS and know how to access it. Another advantage is that special software is not required to view the materials, and they should generally display the same for all students. However, the biggest challenge to using materials built within the LMS is that students are not able to easily input information, as in the example of the partner – interview activity. Most LMSs are restricted to displaying static pages or pages with limited interactivity, such as having built-in quiz questions. To freely record partner answers, students may have to open a separate word processing document on their computer or rely on physical paper.

Another option available to teachers who want to create their own materials is to simply design them in word processing software, such as Microsoft Word. The file can then be shared with students via an LMS, email, or other digital distribution method. Students can then input text into the document on their computers in order to complete in-class activities. This is perhaps the most straightforward solution for teachers, but it comes with a number of limitations. First, it requires students to have the software necessary to view the file. There may also be problems if students open the file in semi-compatible software. For example, the cloud-based Google Docs and Microsoft 365 are able to open Microsoft Word files, but they may alter formatting or even remove components such as textboxes. This makes it difficult for the teacher to anticipate what students will see when they open the file. A second limitation of distributing materials as word processing software files is that it is difficult to preserve the text formatting

as students interact with the materials. For instance, as students input text within the file, the text of the materials may shift down across pages and become disordered. Word processing software is intended as a means of writing text, so it is not an ideal way for students to interact with learning materials.

A third option, and the one that we advocate for in this paper, is to use fillable PDF files to design and distribute digital materials to students. This is a two-step process. First, the preliminary materials are created as a PDF file in whichever way the teacher is comfortable with. This can be done by using word processing or design software, by digitally scanning a paper handout, or by any other means of creating a PDF. The PDF is then loaded into the commercial PDF-editing software Adobe Acrobat (www.adobe.com) and made interactive through the use of Acrobat's "fillable forms" function. This function was originally intended as a way to create interactive forms for distribution, such as to business customers or clients. It is also a convenient way to quickly make any document interactive by adding textboxes and other components where students can input their work. One benefit of designing materials as fillable PDFs is that students do not need commercial software to access the files. There are a multitude of free PDF viewing apps available for download, and both Windows and MacOS come with pre-installed apps that students can use. Another benefit is that the formatting of the PDF is maintained regardless of the text that a student might input. The teacher is able to precisely define where students can input text, and only those areas can be edited.

A Guide to Creating Fillable PDFs

In this section, we present a guide to creating

fillable PDFs using Adobe Acrobat. Adobe Acrobat is commercial software that is part of the Adobe Creative Cloud software suite, and many institutions provide teachers and students with subscriptions to it. There are free software alternatives that also allow users to create fillable PDFs, such as LibreOffice (www.libreoffice.org). We will focus only on Adobe Acrobat in this guide, because it provides the most robust and easy-to-use toolset for creating fillable PDFs. The screenshots and text labels were taken from Adobe Acrobat ver. 23.006.20380 running on MacOS Sonoma 14.0. There may be some variation with different versions and different operating systems, but the basic functionality to create fillable PDFs exists in all recent versions of Adobe Acrobat.

Source Document Preparation

As previously mentioned, the process of creating a fillable PDF involves two steps. First, the source PDF document must be created. This can be done in a variety of ways, including by scanning a paper document, but perhaps the easiest way is through Microsoft Word. After the source document has been created, the second step is to load it into Adobe Acrobat, where it will be converted into a fillable PDF. Here we will briefly consider some design aspects that should be factored into the creation of the source PDF.

Teachers who are used to making paper-based materials may need to adapt the types of input cues and spacing that they use for digital materials. Paper-based materials typically use cues like underlines, blank spaces, and numbered lines to prompt students to physically write responses on paper. The ability to adapt handwriting size to different spaces is an advantage for such materials.

However, font sizes are fixed with digital

materials, so the design of text input fields must take this into account. In the source PDF, blank spaces must be sufficiently sized to accommodate text input. In addition, while traditional underlines may still be useful for prompting student input, they must be used carefully so that students can easily tell where they should input text. It is typically preferable to remove conventional underlines in order to create what is commonly referred to as “negative space” or “white space”—the areas in a design unoccupied with text or graphics (Williams, 2014). The quantity of negative space within the source document should be large enough to allow for the insertion of text input fields. Once the source document has been created, it can be saved as a PDF and then opened in Adobe Acrobat.

Making Fillable PDFs

This section will present a step-by-step walkthrough of how to create a fillable PDF in Adobe Acrobat. Note that some terminology and positioning may vary across versions of the software.

Adjusting Form Preferences

1. Open your prepared PDF in Adobe Acrobat.
2. On the left-hand side, locate the “All Tools” menu and click on “Prepare a Form.”
3. In the “Prepare a Form” section, find the “Auto Detect Form Field” option and click the “Change” button to access preferences (Figure 1).
4. Uncheck “Automatically Detect Form Field” to gain manual control. This option is preferable if you have not intentionally designed the materials with form-style input in mind, as not all graphic cues used in EFL/ESL materials will be recognized as input fields.
5. Optionally, customize the “Highlight Color”

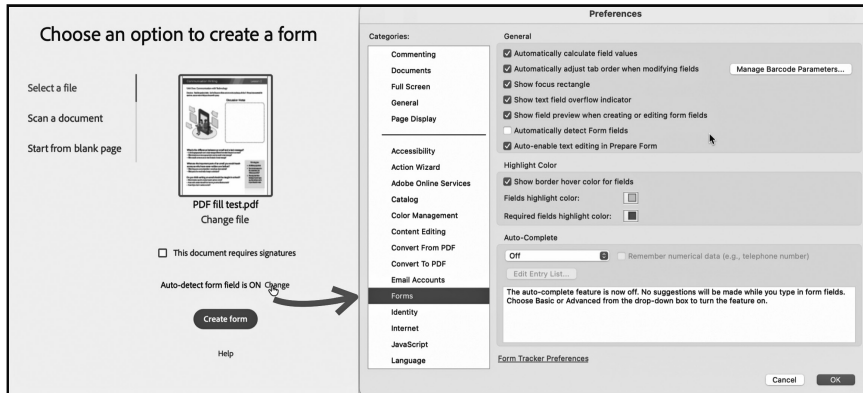


Figure 1. Preferences for creating fillable forms in Adobe Acrobat.

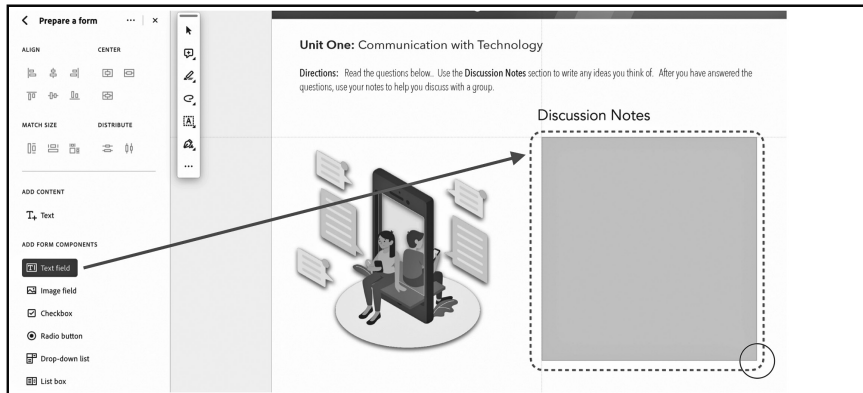


Figure 2. Adding a text field to the document.

for user interaction.

6. Click “OK” to save changes.
7. Click the “Create form” button.

Creating Form Fields

1. Locate the “Add Form Components” header on the left-hand side.
2. Choose “Text Field” to add an input field to your document.
3. Adjust the size and placement of the field as needed (Figure 2).
4. Repeat this process for each area requiring text input.

Customizing Text Input Properties

1. After placing the text field, select the “Selection Arrow” from the left-hand menu.
2. Right - click on the field and choose “Properties.”
3. Access the “General” tab. The text field can be renamed here for better organization. This becomes significant in cases where adjustments to the fields might be necessary later on. Additionally, Adobe Acrobat offers an advanced feature that allows the collection of information entered in form fields into a database. For this functionality, proper setup is

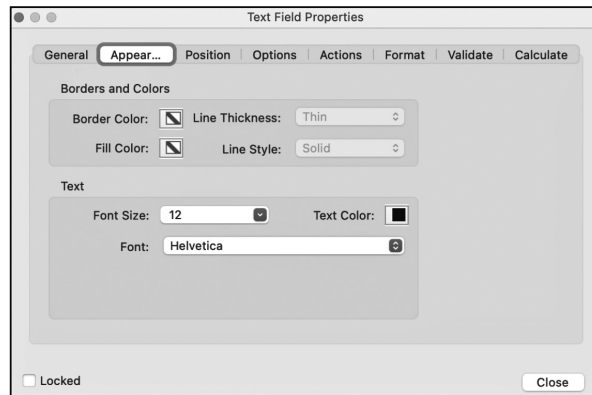


Figure 3. Adjusting the appearance of the text field.

crucial, and maintaining a structured naming convention becomes essential.

4. Navigate to the “Appearance” tab and customize border color and text color preferences. Opting for a consistent border color throughout all course materials to denote input fields ensures that students can easily identify and use them with ease.
5. Move on the “Text Settings” section in the “Appearance” tab to establish font type, size, and color. Adjust these options as necessary, depending on the size and intended purpose of the text input field (Figure 3).
6. Make additional adjustments to text input properties as needed. We will touch upon a few important properties next.

Alignment Options

When customizing your form fields, consider the alignment options available under the “Options” tab. If anticipating longer answers, left alignment may be preferable, allowing users to provide comprehensive responses. Conversely, for input fields placed within sentences where users are expected to input just a few words, center alignment may be more suitable,

providing a cleaner and more visually appealing layout.

Multi-Line Option

Also located in the “Options” tab, checking the “Multi-line” option is crucial for fields where longer responses are expected. Without this option selected, users can only input text on a single line. This restriction means that word wrap is not applied, and any text exceeding the width of the form field will be truncated, making it invisible to users. Enabling the “Multi-line” option ensures that text automatically moves to the next line when it reaches the width boundary of the text field, allowing for seamless and complete input of longer responses (Figure 4).

Previewing and Exporting

Upon insertion of the text field and adjustment of the properties, proceed to test the materials. Click on the “Preview” button located in the lower left-hand corner (Figure 5). This action will reveal what the end user will observe when accessing the fillable PDF. Ensure that all text input fields operate as intended before saving and exporting the document. If the document appears to be functioning correctly, utilize

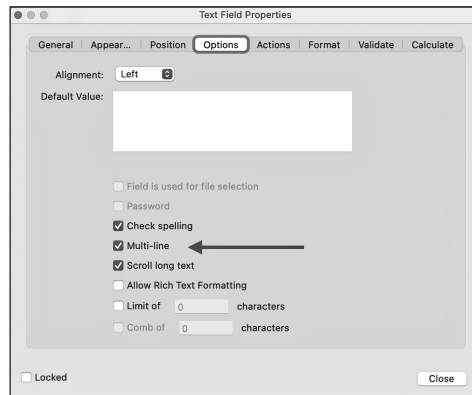


Figure 4. The multi-line option enables word wrap within textboxes.

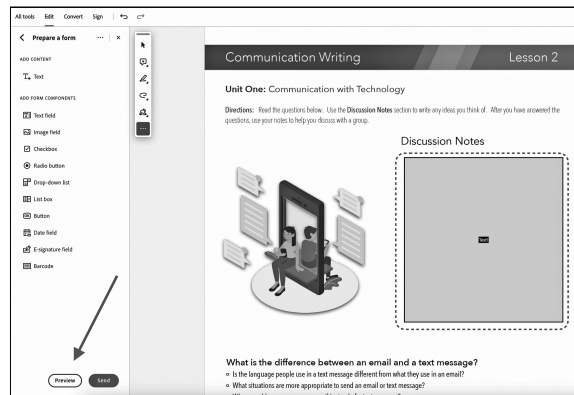


Figure 5. Preview the fillable PDF before saving.

“File > Save As” to export the fillable PDF.

Conclusion

Teacher – made materials are an important component in many second – language classrooms. However, with the recent shift to paperless classrooms, teachers face hurdles in designing materials for the new digital medium. Using fillable PDFs provides a simple, time-efficient solution. One advantage of using fillable PDFs is that they do not require special software for viewing; all modern operating systems come with built-in software that

can be used to input text. Another advantage is that the formatting of the materials is preserved, regardless of the text that students input. For example, even if a student inputs a large quantity of text, the following sections of the document will not shift their relative position. Finally, using fillable PDFs gives teachers some needed flexibility in designing materials that engage students. By using fillable PDFs, teachers are best able to approximate the range of student-centered classroom activities that were possible with paper-based materials.

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