

Five Creative Ways to Use a Scanner in the Classroom

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“How can I use a scanner?” This was a consistent response to an icebreaker question in an online professional development course I led recently for TCET. The icebreaker required teachers to discuss three technology tools they would like to learn more about. Interest in the scanner was strong, particularly in learning good ways to incorporate it into the classroom. In part due to this experience and in light of the fact scanners are increasingly available to teachers throughout the state, I felt this article would be useful. Educators with access to a scanner will hopefully discover some ideas for using it in their classrooms and perhaps we can all help spark additional creative efforts.

This article will presume the scanner is hooked up and working properly, with appropriate software installed. A variety of brands are on the market, each with unique installation software and procedures. We will not focus on the how-to's of setting up equipment. But, if everything is properly installed, you should be able to scan directly into the application of your choice.

A quick and easy photo manipulation program available on many classroom computers is Microsoft Photo Editor. This software comes with Microsoft Office, and its shortcut typically resides within the Microsoft Office Tools folder. When I am scanning things in, I scan directly into Photo Editor, manipulate as needed, then save. This is a faster process than using the scanner's proprietary software, saving the image, then opening Photo Editor to work on the image. You can use other products in much the same way, scanning directly into Adobe Elements or PhotoShop, for instance.

Some folks are confused about dots per inch (DPI). Note that a computer monitor does not treat an image's DPI the same way as a printer. A higher DPI will often yield a sharper printout, but not necessarily a clearer image onscreen. Experimentation for best results with your particular project is a necessity, but acceptable color images for printing and viewing can often be had at 200 DPI and black and white text scanning at 150 DPI.

Once an item is scanned, the data comprising the image must be saved to the hard drive. Your software will offer a variety of formats in which to save. The most common formats are GIF and JPG (pronounced “jay-peg”). The JPG format compresses images more, making the files smaller and faster loading on Web pages. For the sake of efficiency many people find saving images in the JPG format preferable.

Once the image is saved you may want to manipulate it somehow. “Cropping” is one of the most common manipulations and can be performed with your photo editing software. Cropping your images will eliminate unwanted backgrounds and can serve to refocus the image's center.

Additionally you may find yourself adjusting the “balance.” Balance is the mixture of brightness and contrast in your digital image.

Once you have the equipment and software working properly, you are ready to begin scanning. Once your images are saved they can be used in a variety of creative ways. We will address five general ways you can use scanners in the classroom, and take a close look at some of the particulars of each.

1. Scan in student work

One of the best uses of scanners in the classroom is digitizing student work. All student paperwork can be scanned and used in a variety of creative ways. This includes artwork, handwriting samples, tests, and homework.

- Students can make artwork into JPGs and insert them as clipart into self-written stories. Using Microsoft Word and your scanner, students can easily create self-illustrated books. Creative writing often receives extra effort when students scan in their own artwork to go along with their stories.
- Handwriting samples are easy to scan and you can demonstrate before and after images of student penmanship at the beginning and end of the school year.
- Parents of elementary students may enjoy seeing how much their children have grown through the year. Scan each child’s hand in August and again in May, then include both with end-of-year student portfolios.
- Tests and homework can be scanned and saved to produce portfolios and provide digitized records of work. Simply add the scanned images of each test or homework assignment to a new page in a Word document. You can print out a copy of all the students’ work, complete with your grades and other markings, at the end of the year.

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Here are step-by-step instructions for inserting scanned images into Word (assuming you have scanned and saved the desired images to your hard drive and are using Microsoft Word XP or equivalent):

1. Open Word and enter desired text.
2. Click Insert | Picture | From File.
3. Find the filename of the scanned image where you saved it on your hard drive and double click on the filename. The image is inserted into your Word page.

4. You can make the image smaller or larger by clicking on it once, then dragging the corners of the image in or out. You can also move the image on the page and perform additional formatting using the picture toolbar.

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Students can also create “scanner collages” which may become attractive art projects. In order to make a scanner collage, students arrange related items on the scanner bed in a creative fashion to form the collage. Note the objects do not necessarily have to be made out of paper. When printed or stored as digital images, students and parents alike will enjoy seeing the creativity evident in the results.

Creating a digital family photo album is another neat project involving students. Care needs to be exercised to not lose priceless family photos. Always ask parents to send copies of pictures to your classroom, not irreplaceable one-of-a-kind prints. Once scanned in, students can write verbiage below the pictures of their relatives and print everything out in Word. Another idea is to create a CD with all the family pictures on it that students can take home to show on their computer or DVD player.

2. Copy forms and worksheets

Nobody likes spending time at the copier, especially when they only need one or two copies. If you have your forms and worksheets scanned in as digital files on your computer you can simply send them to the closest printer. You get a fresh copy of the form this way, and avoid the wait at the copy machine. If your school has a copy quota you will save there as well.

You can scan in worksheets or other items such as blank lesson plan pages and save them as full page graphics in Word. Then, whenever you need a fresh version, simply open the Word document and print out a new one.

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Certain software will allow you to scan forms and translate them into editable text, complete with all the forms’ blanks and lines in their appropriate places. This allows you to turn a paper form into an editable document you can fill out on your computer rather than by hand, giving the completed form a professional look. If you do not have access to such software, you can replicate this feature by scanning in the form and placing it as an image in Word, then entering text on top of the image in the appropriate blank spaces. Here are the steps to follow:

1. Scan the form in and save it as a graphic at its normal size (typically 8.5 by 11 inches).
2. Open Word to a blank page and insert the scanned image of the form. Position the image if needed in order to make it fit all on one page. You may also need to adjust the margins of your page in Word to accommodate the graphic. You can do this by clicking File |

Page Setup and adjusting the top, bottom, left and right margins.

3. Next you will manipulate the graphic in a special way. You are going to tell Word to put the graphic “behind” the text so that anything you type in over the graphic will show up. Left click on the graphic once. From Word’s main toolbar, click Format | Picture. Click on the Layout tab then choose “Behind text.”
4. You now have a full page graphic on one page with the ability to “type” on top of it. Position your cursor to the desired blank in the form and type in your text. Adjust font size as needed to fit the blanks. Print the form out when you are done.

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Remember your scanner can serve as a copier when needed. Many come with the feature built in, with a button on the front. Hit the “copy” button and whatever is on the scanner bed will automatically print out. If your scanner does not have a “copy” button, the same function can be replicated by simply scanning a document in and printing it immediately. This makes the scanner your own personal copy machine right in the classroom.

3. Use as a close-up digital camera

If you have trouble obtaining a digital camera for classroom use, you might find your scanner a good substitute in a pinch. The obvious disadvantage of using a scanner as a camera is it cannot capture images in three dimensions, and people shots or shots taken in wide areas (that is, typical camera shots) are going to be impossible. If, however, you need a close-up of something the scanner might do well, especially if it is flat and you just need the front of the object. Note that the object cannot be larger than the scanner bed, and care should be taken when placing heavy objects on top of the scanner.

If the object is large and prevents the user from closing the lid, the background surrounding the item will be black. This can be left as is or cropped out using your digital photo software. Note also that you may need to tweak the balance in your images when scanning in objects this way. Photo Editor has an “auto balance” feature that automatically adjusts the image and makes it look nicer. Other programs have similar features.

The scanner may actually be preferable to a digital camera for certain types of close-ups. Plants, leaves, insects, and rocks used in science projects can be placed on the scanner bed and their images quickly stored. The close-ups may then be placed in databases, Word documents, or spreadsheets for additional use by students. When students return from nature hunts they can scan in the specimens they found to illustrate reports and create databases of local flora.

4. Use for OCR

Optical Character Recognition (OCR) software translates text from the paper page to digital format where it can be manipulated within word processors. One of the best uses of OCR is to assist visually impaired students by translating paper-based text into Braille or digital text for use

in electronic readers. Some brand of OCR software is probably included with your scanner. If not, note that Adobe Acrobat (the full version, not the free Acrobat Reader) does a good job performing OCR on scanned material. A side benefit to using Acrobat: the material is saved as a PDF document, one of the most popular file formats.

The biggest caveats when using scanners for this purpose are the time and effort required in minimizing and eliminating OCR errors. All errors made by the software will need to be corrected by hand. Typically, the lower the resolution of the printed material the higher the chance for errors. Copies of copies do not scan well. Additionally in order for good OCR to occur, the paper will need to lie flat on the scanner's screen. Pages from textbooks or other bound material will typically need to be cut out with a razor so they can lie completely flat.

This often requires more work than it is worth, so scanning entire books for your visually disabled students is recommended only as a last resort. Instead, existing electronic versions of texts should be procured if possible. However, there may be instances when certain printed material could well serve your disabled students were you to scan it and enable them to access it electronically. Such a situation might occur with printed material you have personally developed but do not have on disc, or with other district-owned material which is older and likewise not in electronic format. In these situations using the scanner for OCR is ideal, and the trouble involved in getting the text into electronic format becomes worth the effort.

5. Record historical items

Scanners are ideal tools for preserving digital copies of historical paper artifacts. Teachers can inspire students to the need for historical preservation and spark an interest in things that are "old." Some things you can have students scan in as part of a community-wide historical project include: old phonebooks, marriage certificates, genealogical pages found in the front of family Bibles, community cookbooks and handwritten family recipes, local maps, newspaper articles, menus from local restaurants, old yearbooks, playbills from school and community plays, graduation paraphernalia, medals earned by local veterans, old photos from the high school yearbook and journalism departments, and other flat or paper items in the community created before personal computers became commonplace.

Students, parents, and community members can get involved in gathering these items and the entire event can easily garner a wide following. Remember to include materials from schools shut down after statewide consolidation and integration efforts.

The local library in your community might have a variety of historical items needing to be digitized. Librarians by nature are cautious when allowing anyone (children included) to handle fragile and irreplaceable documents. However, you may find a willing librarian who will allow your class to assist while supervised in creating electronic versions of documents, sorting and filing pictures into databases, or setting up electronic portfolios of old photos, maps, and letters.

The resulting digital products can pay homage to your students' efforts with an opening statement such as "Created with assistance by Mrs. Smith's class at Local School." Perhaps scanned signatures of each student's first name can also be included. Scanned historical photos

can be sent to the local newspaper for publicity purposes, and used in a variety of electronic applications such as screen savers, digital photo albums, and databases. Images inserted into PowerPoint presentations can run on a continuous loop at a library kiosk for display purposes, and can be available on CD or DVD for checkout. Remember that CDs or DVDs of the historical images can also be sold in the community as a fundraiser.

Conclusion

The scanner is a versatile tool, limited in classroom application only by your imagination. Scanning in student work allows digitization of handwritten material and assists in the creation of electronic portfolios. While the scanner is similar to the digital camera in some ways, it fills a different niche. In some instances it is superior to the camera, especially for close-up shots of small flat items. It can serve as a personal copy machine in limited capacity. It can also be used to create digital text through OCR which may assist visually disabled students. Scanning in historical artifacts from the community allows for digitally preserving items that may otherwise be destroyed. In short, the scanner can be applied to an amazing variety of uses. It is inexpensive, fairly easy to master, and highly applicable to classroom projects.

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