# Chapter 27
# What Do You Do With a Digital Pen?

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## ABSTRACT

*This chapter describes an assistive technology device called a digital pen. Digital pens allow notes written to be uploaded to a computer and translated into word processing documents. The new LiveScribe Echo™ provides this feature and also digitally records an audio track to accompany the notes. This technology can be used by students with disabilities for note taking, writing, reading, mathematics, and virtually any content area. Using the pen for augmentative communication, as well as in-class assessment is discussed. Teachers can use a recording digital pen to create a "pencast" of a lecture. The pencast could then be available for repeated viewings by students who require repetition for learning or those not available when the content was covered. The chapter concludes that the recording digital pen's applications and usage will expand as knowledge of the device increases.*

## INTRODUCTION

What if your student could upload his or her notes into a computer document without using a digital board? What if the notes were remembered by the pen that wrote it? What if your student could re-listen to a lecture while viewing main header notes? Welcome to the world of the new digital pens. How would that benefit the communication between you and your student?

A digital pen is a handheld electronic device that has its own memory. Most digital pens such as LogiPen™, Pegasus™, and Sony™ can write on any paper surface. Another version such as LiveScribe Echo™ that allows the recording and playback of an audio track does require specially coded paper. The pen does not need to be connected to a computer to work. If you upload the pen's memory to a computer, you can view, store and edit your written ink notes. Some digital pens are even compatible with Microsoft Word. Most digital pens range in cost from $100-$180 per pen

and include the pen, a computer connector cable, and software that enable handwritten material to be translated into text.

So what can you do with this wunderkind? Your imagination is the limit. The remainder of this chapter will focus on pens that allow concurrent audio recordings.

## A PENCAST LECTURE

Who needs an interactive whiteboard, overhead projector or slide projector? You can create your own "pencast" using the specially coded paper and a pen. Then you use your pen and a document camera to teach the content. You can upload everything to a classroom computer or website for students to reference at a later time. Every student will have access to the exact same lesson at any time you allow.

From the student's point of view, instead of scrambling to copy down everything from the board or trying to remember later what some cryptic note means, the student can take down key points, drawings, or dates from the pencast. The lecture will be available on a class computer to fill in any missing information later.

## USING DIGITAL PENS FOR STUDENTS WITH DISABILITIES

Disabilities will not magically go away with the use of any technological device. Hard work on the part of the student and imaginative application of technology on the part of the teacher will still be required to help students compensate for disabilities. However, digital pen technology can be used in many ways to assist the learning process.

### Note-Taking

Note-taking requires the student to simultaneously listen, remember and write down information. This is a challenge for most students and particularly for students with an attention deficit. Although computers and PDAs have been used to facilitate note-taking, research has shown that note-taking actually takes longer on these devices than with paper and pencil, requires familiarity with the equipment and does not lend itself to drawings or diagrams (Davis et al., 1999; Van Schaack, 2009; Ward & Tatsukawa, 2003). For students with learning disabilities, a digital pen would allow them to use their cognitive abilities to focus on the material being presented rather than on the multi-tasks of note-taking. The pen would allow him or her to take big idea notes and record the audio simultaneously. The lecture could be played back when reviewing the notes to fill-in gaps, possibly to restructure notes and to reinforce ideas. Kiewra (1989) found that lower-achieving students who could rehearse a lecture were able to bring their notes up to the level of the highest achieving students. Although video and audio tapes could provide this feature, they are not linked to the note-taking page as the recording would be with a digital pen. Research has also noted that multiple hearings of lecture material creates a higher level of recall and synthesis. For days when a student is absent, the pencast would become another way of making sure the student has the material available in the same way that the other students received it. This is particularly beneficial for students with higher absenteeism due to physical and other health impairments.

### Writing

For students with difficulty in writing, a digital pen would enable the student to see their work on the computer. The computer's spell-checking capability could assist with highlighting misspelled words. This could be used to create a personalized spelling list. The student could use the specialized paper with whatever line width and spacing assisted him or her in writing while the computer would put their words and lines together. This

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