**1.  **

**Note Taking Software and Web Notebooks**

*Note taking software* is used by both students and businesspeople to take notes during class lectures, meetings, and similar settings. It is used most often with tablet computers and other devices designed to accept pen input. Typically, note taking software (such as Microsoft *OneNote* or the Circus Ponies *Notebook* program shown in Figure 6-32) supports both typed and handwritten input; handwritten input can usually be saved in its handwritten form as an image or converted to typed text. The Notebook program also includes a voice recorder so you can record a lecture or meeting—tapping the speaker icon next to a note replays the voice recorded at the time that particular note was taken. Note taking software typically contains features designed specifically to make note taking—and, particularly, retrieving information from the notes—easier. Like a paper notebook, tabbed sections can usually be created (such as one tab per course) and files, notes, Web links, and any other data are stored under the appropriate tabs. In addition, search tools that allow you to find the information you need quickly and easily are usually included. Online versions of these programs (such as *Zoho Notebook* and *Evernote*) are sometimes referred to as *Web notebooks*. Web notebooks are designed to help organize your

online research (including text, images, Web links, search results, and Web page resources), as well as other content (including notes, documents, and scanned images) that you want to save.

**Note taking software.** Allows individuals to record and organize important data.

**2.** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/>

## DIGITAL NOTE-TAKING

The introduction of mobile computing devices in classrooms ushered in a new set of note-taking issues. Speed, legibility, and searchability are 3 positive attributes of digital note-taking.[8](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B8) Because of these advantages, some students may prefer digital note-taking vs traditional handwritten notes. However, changes wrought from these advances in technology are not all positive.

Possibly the biggest concern with student use of laptops in class is computer-aided distraction.[24](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B24) The lure of multi-tasking on those devices can significantly hinder student comprehension of classroom lectures. Other concerns arise in the efficacy of typed notes. Muller and Oppenheimer concluded that students who took notes on a laptop did not remember conceptual material as well as those who took handwritten notes, though they performed equally well when questioned about factual information.[25](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B25) One hypothesis for this difference is the inclination for those who type their notes on a laptop to include longer notes and to take down information verbatim rather than through rephrasing. Other studies support these findings; Piolat et al showed students taking handwritten notes demonstrated better performance than students who typed digital notes on both factual and conceptual questions.[20](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B20) As a result, Fink reported banning all forms of digital note-taking, citing that, without the digital devices, students remained attentive and performed well in the course.[26](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B26)

**Note-taking applications**

Coinciding with the introduction of tablets and smartphones was the development of mobile applications (apps), which provide easy access to a variety of functions. Literature concerning the use of mobile or tablet application in the classroom is sparse. Most information available comes from technology-centered magazines or online app reviews. The mobile app market changes rapidly, and Internet searches for note-taking/study apps reveal considerable options in functionality and price.

Informal discussions with students revealed that personal choices for app use and/or selection depend largely on classmate recommendations. Recommendations of mobile apps to aid in student success have also been presented at pharmacy student forums. Recommendations, based on student utility and reviews, included StudyBlue Flashcards (a flashcard application for studying), Evernote Peek (a note-taking and flashcard style app), Dropbox (an application used for document storage and collaboration) and note-taking applications Evernote, Notability, and Penultimate.[29](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B29)

Based on research regarding cognitive functions of note-taking, a variety of factors make note-taking apps appealing. In order for learning apps to be effective, they must accommodate an active note-taking process and enable efficient review of those notes.[30](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B30) An application that simply allows students to copy and paste prewritten notes without including their own definitions or elaborations is much less effective than one that encourages personally written language. While verbatim notes may be more accurate, the benefit of “process” is absent, and therefore, lessens the effects of the learning experience. Apps that permit students to draw upon, edit, summarize, and highlight handouts in a manner that allows cognitive involvement in the note-taking process are most beneficial to learning.[30](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B30)

Formal use of apps for note-taking and learning is in its infancy. One example of an app-based initiative comes from Abilene Christian Academy, which issues each of its students an iPod Touch or iPhone to use during their education.[31](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B31) The primary focus of using these devices are the apps available to enhance student learning. Chemistry professors find apps particularly useful, as they allow students to visualize complex molecules and identify chemicals and their names.[31](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B31) In addition to an enhanced visual and tactile learning process, apps also can improve note-taking by allowing more complex images and other media to be integrated into students’ written guides. Use of these devices in the classroom helps train students to use a variety of applications and tools crucial for careers in the digital age. Moreover, tablet and smartphone apps are now common in the clinical environment,[32](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B32) with some large medical centers advocating the use of apps and supplying facility-owned iPads so its staff can securely view electronic health records.[33](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B33) Studies of medical providers show that up to 85% of its study population (surgeons, fellows, and residents) own and use a smartphone in practice; more than half of those studied use applications in their daily practice.[34](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B34)Use of such apps has vastly improved the ability for health care providers to access credible information, view patient charts, and complete all functions in a timely manner.[32](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B32) Some apps have been evaluated and recommended for use in practice; the scope of these apps range from providing information about medications (eg, PEPID, Lexicomp, Epocrates), to time management and productivity (eg, Wunderlist, Dropbox, GoodReader).[35](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B35)

**DISCUSSION**

Most faculty members establish their own philosophies regarding handouts and note-taking. However, it may be time to consider new student-centered approaches that provide learners with the best and most efficient way of learning while in the classroom and after they graduate. Delivery style and methods can affect how students receive, process, and record notes. Our use of technology in the classroom (ie, PowerPoint slides) may be below its potential, and faculty members may want to consider uses of instructional technology beyond efficient content delivery.

Observations of students in classrooms reveal varyious note-taking strategies, some of which involve students serving their own learning needs by modifying what faculty members give them. There is much to learn about student note-taking behaviors. The caveat is that instructors should not rely solely on learner preferences pertaining to handouts and/or note-taking to guide decision-making. Considerable research in the area of metacognition revealed that some individuals are unable to accurately assess their own level of comprehension or skill guiding their preferences. While these individuals may perceive a certain style or method as best for them, in reality those may be false perceptions because of an incorrect assessment of their own abilities.[36](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B36)

As educators continue to migrate away from traditional content-delivery modalities in classrooms toward more student-centered approaches of using face-to-face time for in-depth thinking, engaging, and applying information, classroom note-taking may change. Student accountability for managing their own learning processes may increase, thereby altering student approaches to studying. Lecture transcription may become less of an issue as instructors utilize technology to create offline lessons, recorded lectures, e-learning materials, etc.

Because digital learning materials are available at will, the need to further document them will be reduced. Some students may choose to forego notes altogether, perceiving that e-learning materials replace any need for taking notes. However, those students may need instruction regarding the cognitive benefits of note-taking, which extend beyond mere access to information for study purposes. Other students may continue recording notes as they always have, believing (correctly or incorrectly) that approach benefits them. Still others may adopt different technology-enabled methods. In courses utilizing a flipped classroom approach or in ones that emphasize active learning, it is likely that students will discover new apps and platforms that accommodate their needs before faculty members do. Educators, however, have a leadership role in shaping student practices that lead to their development as a professional. The difficult question is, thus, how educators can guide students regarding note-taking.

Existing research on student note-taking does provide a foundation, but this is an age in which some aspects of the former paradigm no longer apply. Student note-taking is evolving because a myriad of technological advances are triggering an information explosion, changing how information is managed and, to some degree, changing teaching practices. Therefore, the evolution toward a new, evidence-based comprehension of student note-taking in digital and mobile environments is important. Without an understanding of these tools and the socio-cognitive processes associated with them, we risk underutilizing powerful tools and/or making recommendations that students may not follow. One consideration is whether there are specific digital tools that aid student note-taking and learning and, if so, how instructors can best accommodate those tools. In a rapidly changing, mobile-technology environment, this question requires constant vigilance.

Another consideration is how an approach to handouts affects student note-taking, attention and, ultimately, learning retention. This instructional consideration often is unintentionally ignored. Anecdotally, some instructors comment that students do not pay attention in class and resort to memorizing copies of the PowerPoint slides. Conversely, if instructors do not provide handouts, students then complain about the lack of handouts and spend the entire class transcribing everything. In each of these cases, instructor decisions may strongly influence respective student actions. Variables such as teaching methods, assessment methods, instructor persona, and student culture contribute to these student behaviors, but a broad-based discussion of these is beyond the scope of this paper.

If handouts are the lone variable, however, one consideration consistent with research is to furnish “skeletal” notes/outlines. This type of handout provides students with a cognitive scaffolding, alleviating the need to transcribe everything, yet still forcing them to pay attention and engage in the process of note-taking. An additional consideration, referring back to our need for research on digital note-taking tools, is to provide notes in a format conducive to student manipulation on digital devices.

The handout format types most likely used by faculty members (eg, PowerPoint slides, Microsoft Word documents, and pdf formats) all have different advantages and limitations, which may indirectly contribute to different note-taking styles and methods. The style, breadth, depth, and visual layout of student notes may vary depending on whether students use paper, laptops, or tablets. This is one of the reasons new research is essential, particularly in light of recent findings regarding cognitive differences between typing and handwriting.[25](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B25)

Finally, as digital environments increasingly affect higher education, we should consider the evolving interplay between note-taking, information management, and lifelong learning. The first decades of the digital age has introduced society to a variety of paradigm shifts including how we view the concepts of information storage and retrieval. Educators may need to rethink what it means to take notes and how those notes carry forward into future careers.

In a paper-based society, it was challenging, but not impossible, for students to carry all their notes with them. In addition, this made it potentially more challenging to sort through notes to review a particular concept. Now, not only can learning materials be stored on a phone or tablet, but students can find a phrase or concept in seconds. Cognitive and conceptual links can be made within and across courses. Admittedly, this is a drastic shift in thinking, but new ways of teaching (eg, flipped classrooms), new focal points for learning (eg, personal lifelong learning), and new ways of storing and accessing information (eg, mobile computing devices and apps) provide a foundation from which we can explore different models for note-taking and handouts.

**CONCLUSION**

Although handouts and notes are a seemingly minor point in the teaching process, we must still take an evidence-based approach to guide teaching and learning practices in this regard. While neither faculty members nor students appear to prefer one format over another, the best handouts allow ample space for students to reformat information into their own words and may even be somewhat “sparse” to encourage active listening and note-taking. Yet, the purpose of and types of note-taking may be evolving. Note-taking should not become an art lost to the ages of recorded class lectures and pre-filled handouts. Without the valuable skills of listening and recording, students might fail to become “competent practitioners (who are able to) listen, read, organize, integrate, and utilize information in the care of their patients.”[37](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B37) Students should use the note-taking medium that best engages their willingness and ability to learn.[38](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4812780/#B38) Learners must discover the delicate balance of practical use, ease, and efficacy for their note-taking strategies. In this technology-literate society and rapidly-changing learning environments, faculty members need to guide students toward managing their current and future learning needs. Research regarding learning outcomes with today’s digital note-taking tools is needed, particularly as the possible existence of a physio-cognitive connection between writing and learning is considered. This research could help provide evidence-based recommendations to students and instructors regarding which formats and techniques work best for learning.

**3.** <https://en.wikibooks.org/wiki/The_Computer_Revolution/Software/Note_Taking_Software>

## Note Taking Software

Note taking software allows individuals to record, organize, and file important information in a single place. The data is kept within your fingertips thus reducing the need to search through various documents to obtain information. Note taking software is often used with tablet computers and pen input devices. It is also often used on laptops computers and PCs. The software is specifically designed to facilitate the ease of note taking without having to conform to a format and it is designed to give you the ability to organize and retrieve the notes to how it fits your needs. Some features include having tabbed sections- like in a paper notebook and have the capability to search through information quickly and efficiently. Examples of note taking software include Microsoft One Note, Agilix Labs Go Binder, and Evernote.

Reference: Morely, Deborah; Parker, Charles. *Understanding Computers Today and Tomorrow.* Course Technology, 2011, pg. 244.

Taking a pen and notebook to class or to a meeting may very well become a thing of the past with the advent of note taking software. Designed for students and business personnel it has the capability of accepting both handwritten and typed input. Handwritten notes can remain true to their original form and stored as images or can be converted into typed text. Note taking software was designed in order to make the time-honored tradition of putting pen to paper to record pertinent facts less taxing and more efficient for all involved. After inputting the information it is then organized using a custom tab system for easy retrieval. Web notebooks – such as Google Notebook and Zoho Notebook – are online versions of note taking software that are specifically programmed to organize the user’s online files such as web pages, research, text and images.

Reference: Morely, Deborah and Charles Parker. "Understanding Computers Today and Tomorrow" 13th Edition

**4.** There are plenty of ways to take notes. You could carry a notebook and pen in your pocket, or scribble thoughts on a napkin at lunch. Or, better yet, you could use a notebook app, so you always have a way to store your thoughts—even if there's not a pen nearby.

Notebook apps come in all shapes and sizes. From simple plain-text notebooks to apps that recognize your handwriting and record audio, you can find a notebook app for anything you want to remember.

\*\*\* <https://www.sitepoint.com/10-notebook-applications-for-managing-ideas/>

Evernote is only one of many note-taking applications out there, and they all share a huge benefit – the ability to save information that you want to review again later in one easy-to-access location.

The notebook application space is a diverse one — there are online and offline tools, standalone and browser add-ons, free and paid, and even bookmark and wiki-based applications that can function as note-taking tools.

**UVOD**

Softver za vođenje bilježaka koriste učenici, studenti i poslovni ljudi za bilježenje informacija sa predavanja, sastanaka i sličnih događanja, jednako kao i ljudi u svakodnevnom životu za ostale potrebe bilježenja. Neovisno o mjestu, vremenu ili događaju, vođenje bilješki vrlo je korisno. Osim što dobre bilješke pomažu u pronalasku i dosjećanju činjenica, informacija i ideja, sam čin zapisivanja mnogima pomaže u prvobitnom upamćivanju istih. Smisao vođenja bilješki je, stoga, brže, bolje i jednostavnije učenje.

Softver za vođenje bilježaka najčešće je korišten preko tableta i ostalih uređaja koji su konstruirani da primaju unos olovkom. Taj softver obično podnosi jednako unos sa standardnog ulaza kao i unos ručnim pisanjem. Unos ručnim pisanjem može biti spremljen u originalnoj rukopisnoj formi, u obliku slike, ili pak pretvoren u tipkani tekst. Neki programi uključuju i snimač zvuka koji omogućuje snimanje predavanja ili sastanka te spremanje tih zvučnih zapisa uz bilješke koje su u tom trenutku unesene. Softver za vođenje bilješki sadrži značajke koje su dizajnirane sa svrhom da pojednostave bilježenje, a posebno pronalazak i povratak podataka iz bilješki. Često je moguće stvoriti više prozora te spremati datoteke, bilješke i ostale podatke u određeni prozor ovisno o njihovom sadržaju (primjerice, svaki kolegij bilježi se u svoj prozor). Također, obično su uključeni i alati za pretraživanje koji omogućuju brz i jednostavan pronalazak neke informacije.

Postoje i online verzije softvera za vođenje bilješki koje su dizajnirane kako bi pomogle organizirati online istraživanja, koja uključuju tekstove, slike, Web poveznice, rezultate pretraga, kao i ostale sadržaje koje treba pohraniti.