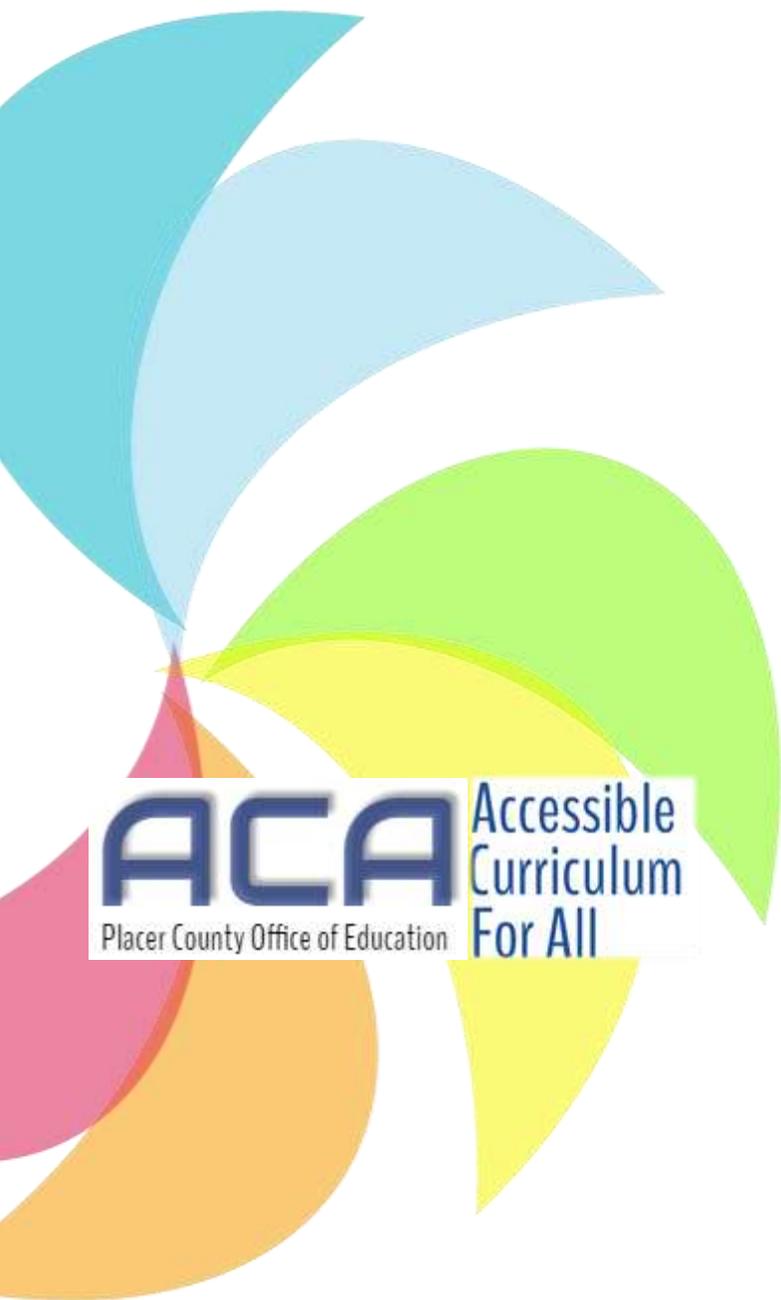


PCOE



## Supporting Writing

*A summary of background information, research, best practice guidelines, and some good ideas to review before we “Tech Up”*

**The Challenge [In “Transforming Writing Instruction with UDL” – Universal Design for Learning in the Classroom – Hall, Meyer and Rose]:**

“Writing is hard work and is difficult to master. Why? Because writing is counterintuitive to how our brains work. Our brains are multimodal. We visualize ideas. Thoughts float in and out of our heads – and rarely in a linear way. Writing attempts to shape that free-forming, dynamic process of thought into a single, linear output of sentences and paragraphs that are logical, concise and clear.”



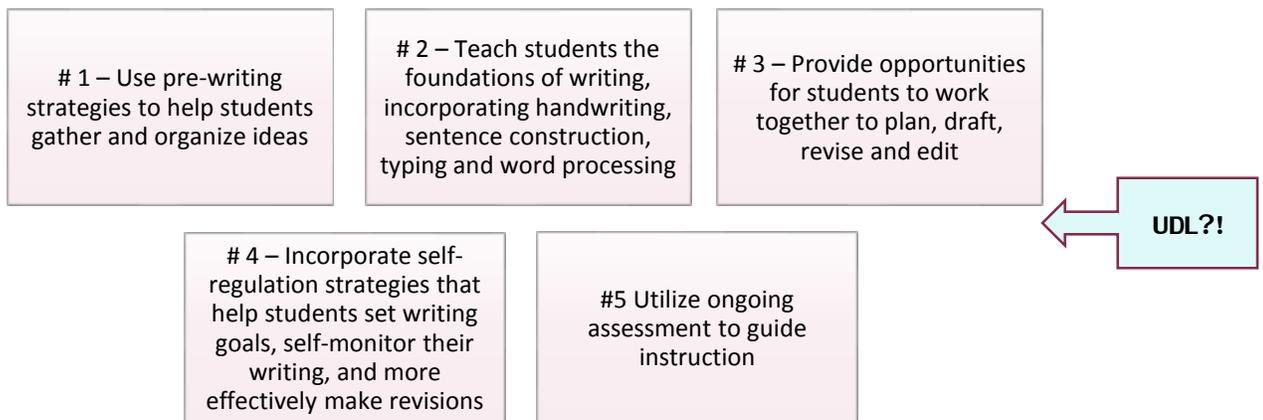
But we also know that writing is an essential literacy skill, key to academic achievement across the curriculum. The stakes are high. Students must demonstrate proficiency in writing in order to graduate and move on to college. More importantly, the ability to write is one of the leading criteria for how we are judged in the workplace. Students who develop effective writing skills enter adulthood, and the workforce, with a significant advantage over those who do not have the ability to express thoughts and ideas well in written form.

**So how are students doing?** Results from the 2007 National Assessment of Educational Progress (NAEP) revealed that 69% of eighth-grade students scored below “proficient” (National Center for Educational Statistics, 2008). In 2012, NAEP released the first results of computer-based assessment for writing (based on 2011 testing). 24% of students at grades 8 and 12 performed at proficient levels, and far more students scored at basic and below (of the 8<sup>th</sup> grade students assessment, 54% scored at the basic level and 20% scored below basic; of the 12<sup>th</sup> graders assessed, 52% scored at the basic level and 21% scored below basic). For good reason, writing has traditionally been, and continues to be, the **#1** reason for referral for Assistive Technology consideration.

**What, currently, constitutes good writing instruction?** The research-based models and methods for teaching good writing are known, but the challenge is *making it happen*. Particularly when it comes to effective writing instruction across the content areas of the curriculum (e.g. science, social studies). If writing is considered to be “the most complex literacy skill that all students need to learn” (Wendling and Mather, 2009), then why don’t we have writing classes, writing teachers and writing specialists?

**Here’s what we know [information summarized from: Denise DeCoste, Ed.D., OTR, *The DeCoste Writing Protocol: Evidence-Based Research to Make Instructional and Accommodation Decisions, 2014*]:**

- Writing begins with the development of foundational skills, that include: handwriting, spelling, sentence construction, typing and word processing, followed by the gradual achievement of more complex and refined writing techniques;
- You learn to write by writing regularly and when given explicit instruction and clear feedback;
- The **process writing** approach is considered to be a foundation for learning to compose. This means teaching students strategies and providing supports for: planning, drafting, sharing, revising, editing, evaluating, and at times, publishing. Here’s what that looks like:



**The Role of Technology:** Writing has transitioned from a solely paper-and-pen task to one where technology not only provides a new venue for writing itself, but also a vehicle for supporting the writing process (e.g. planning, drafting, sharing, revising, editing, evaluating, and publishing). But this evolving role of technology, and in particular the evolution of social networks, brings to question whether the process writing approach is too limiting for how we communicate in the 21<sup>st</sup> Century. The National Council of Teachers of English (NCTE) published a policy brief in 2008 that asserted that writing is not just formulaic and it's not necessarily a linear process. What's recommended is that "students need to engage in authentic, multifaceted and multidirectional writing processes. The role of teachers is to welcome new forms of writing that go beyond the traditional print-based approaches, and provide support on writing across the curriculum, allowing multiple means of expression. New ways of collaborating online, shared digital writing experiences, and digital writing portfolios, are newer strategies meant to facilitate writing progress" (as summarized by DeCoste, 2014).



Because of the integral role technology now plays, with much broader access to technology tools, DeCoste makes the important point that "mainstream tools should be considered prior to the use of specialized AT." She also advocates for providing equitable and preemptive services for the range of students, not just students with disabilities, which is consistent with our model for **Universal Design for Learning**.

**The "Foundations" of Writing:** In this section, we'll focus on two foundations that are essential to talk about...*handwriting* and *spelling*. Again, our source for this information is DeCoste, 2014.



**Is handwriting still necessary?** We begin to formally introduce handwriting in kindergarten, with a focus on developing proficiency from grades one to three. By fourth grade we expect students to be able to handwrite for longer periods of time in order to complete long answers to test questions and extended essays. They are expected to use handwriting for most in-class work (taking notes and completing worksheets). At the secondary level, students must balance speed with legibility as they are asked to write for extended periods of time. Regardless of whether keyboarding replaces handwriting at some point along this continuum (or in some contexts, including writing assessment), as adults handwriting remains an important life skill (e.g. taking a phone message, completing a form, writing a personal note, etc.) **What about cursive writing?** The most important thing is that students develop some form of fluent transcription (manuscript, cursive or a combination, **and** keyboarding). There is some evidence that manuscript is easier to learn, and once mastered can be as fast as cursive. **What about the student who is "illegible", regardless of how much time has been spent learning to handwrite?** Poor handwriting is characterized as: inappropriate spacing between letters and words, incorrect or inconsistent shaping of letters, poorly graded pencil pressure, letter inversions and the mixing of different letter forms. Many students, prior to grade 3 (in the absence of physical or learning disabilities), transition through this process yet eventually develop sufficient proficiency to write legibly. Estimates of true handwriting difficulties vary widely from 10 – 34% depending on the age of the student population looked at and the evaluative tool. The percentage typically decrease as students get older. Multiple studies demonstrate that girls outpace and write more neatly than boys.

**The actual task of learning to "write by hand" does influence and contribute to overall literacy learning** (impacting the memory needed to recall letter shapes, as well as how letters are combined to generate words --- these are integrated into motor patterns). This is sometimes referred to as "graphotactic learning".



**What about pencil grips or grasp patterns, isn't that important?** For the most part, a variety of grasp patterns can produce legible letters and functional speeds. Grasp needs to be comfortable, but not perfect. The ability of a student to maintain the strength to grip a writing instrument may impact longer writing passages as fatigue plays a role. Legibility does tend to decrease over longer passages for students that struggle to write.

**There are significant affective impacts on students who struggle with handwriting:**

- Leads students to avoid writing and overall they see themselves as less competent writers;
- Correlated with underachievement and low self-esteem;
- Lower marks are more often assigned to students with poor handwriting quality.

Spelling is  
~~difficult~~  
~~challenging~~  
hard.

**Why does it matter?** Although most of us rely on spell checker and auto correct features to minimize the effect misspelling has on our communication, being able to spell plays a significant role in the development of fluent writing. *Good spelling allows a writer to write with greater fluency while poor spelling can slow down expression such that it impedes fluent writing.* This is true regardless of the medium for writing (pencil-pen or keyboarding). In addition, when students struggle with spelling, that constrains cognitive resources that would otherwise be used to address written composition.

**In order to really understand spelling difficulties, and set up effective interventions, you need to look at a student's underlying linguistic knowledge.** Neither standardized educational tests (e.g. Woodcock-Johnson III spelling subtest or the Test of Written Language, 4<sup>th</sup> edition spelling subtest) or traditional spelling tests using graded word lists give us this information. Examination of linguistic skills is considered a formative approach that better informs instruction (Apel et al., 2012). [Note: there will be resources, incorporated in some data collection tools and intervention recommendations based on DeCoste's assessment, that we will share during "ACA Implementation".]

### Let's Talk about Keyboarding

The good news is...word processing can have a positive impact on composing skills for typically developing students as well as students with disabilities. However, while keyboarding offers numerous advantages over handwriting, for some students learning to keyboard (particularly to the level of proficiency that will "free up" higher cognitive resources) in and of itself is a challenge.



**What should students be able to do?** The Common Core State Standards state that:

- In the 4<sup>th</sup> grade, students should develop sufficient command of keyboarding skills to type a minimum of one page in a single setting;
- By 5<sup>th</sup> grade, students should be able to type two pages in a single setting.

How we build keyboarding skills into the elementary curriculum to support these standards is up to districts and schools.

**What do we know about keyboarding rates?** Average speeds for adults who use computers daily with a mean age of 25, ranged from 17 WPM for slow keyboarders to 33 WPM for fast keyboarders (Weintraub, Gilmour-Gill, Weiss, 2010). This is our target for high school aged students.

**Keyboarding compared to handwriting rates:** In order for keyboarding to be an effective medium for composing written material, *keyboarding speeds must be equal to or greater than handwriting speeds.* The exception for this rule is those students who require an alternative to handwriting due to significant legibility deficits or physical impairments that require an alternative to pen-pencil.

For most students, little keyboarding instruction is needed to reach a rate that is commensurate with handwriting. In general, keyboarding instruction in the early primary grades may not be the optimal time for achieving keyboarding fluency (for young children the ability to generate text is more dependent on the ability to determine how to spell words than to locate keys). However, for older students to achieve keyboarding proficiency that leads to increased speed and quality of writing, direct keyboarding instruction is important. General recommendations are:

- To focus on familiarity with key locations in the primary grades;
  - To learn touch typing somewhere between 3<sup>rd</sup> and 5<sup>th</sup> grade, once students have the fine motor and literacy skills to take advantage of 10 finger keyboarding and have sufficient attention for keyboarding lessons;
  - The number of keyboarding sessions should be based on the time it takes for students to reach functional speeds (equal or greater than handwriting speed);
  - To maintain baseline keyboarding speeds and improve fluency, students should have ongoing, sufficient generative writing time using the computer.
- ★ *For students in the primary years with illegible or arduous handwriting, keyboarding (hunt and peck) should be used so that they can actively engage in literacy learning to develop spelling and composing skills.*
- ★ *When neither handwriting nor keyboarding automaticity is achieved after explicit instruction and practice, and/or when severe spelling deficits persist, other AT supports should be explored (e.g. word prediction, speech recognition).*

- ★ *It is imperative that students have some form of fluent transcription (e.g. handwriting, keyboarding, speech to text) in order to reduce the cognitive load and allow for the development of higher-level writing skills.*



**Writing Composition:** In order to address this area, let’s talk about “strategies” to support elementary writers, and “strategies” to support middle and high school writers.

**Elementary:** DeCoste describes the transitions in writing from 1<sup>st</sup> to 5<sup>th</sup> grade as follows: “When 1<sup>st</sup> grade writers compose, they often rely on talking and drawing. However, by grade 2, the need to draw decreases, but talking with others to rehearse what will be written and to get feedback on drafts is still important (Calkins, 1986). By the 3<sup>rd</sup> grade, writers are gaining more control of the writing process, the focus on meaning and the connection among ideas (Langer, 1986). In 4<sup>th</sup> and 5<sup>th</sup> grade, students are better able to reread their compositions and make revisions (Calkins, 1986). Writing becomes more than just ideas written down; it is a means of thinking and rethinking (Strickland & Townsend, 2011).”

Based on the U.S. Department of Education, Institute of Education Sciences recommendations for teaching elementary students to be effective writers (Graham, et al, 2012), the following research-based strategies, tied to their four key recommendations, guide our recommendations for UDL supports for students:

Recommendation		Purpose	Research-Based Strategies
1	Provide daily time for students to write.	To learn and practice writing skills, strategies and techniques, integrated into content instruction.	30 minutes per day in kindergarten. A minimum of 1 hour per day starting in 1 <sup>st</sup> grade with 30 minutes devoted to grade appropriate writing skills, strategies and techniques, as well as 30 minutes for writing practice to apply new learning.
2	Teach students to use the writing process for a variety of purposes. <ul style="list-style-type: none"> <li>★ Teach students the writing process</li> <li>★ Teach students to write for a variety of purposes</li> </ul>	<p>To think critically about purpose, planning what to say and how to say it.</p> <p>To use the writing process effectively and flexibly for a variety of real-life purposes and audiences.</p>	<ul style="list-style-type: none"> <li>★ Self-regulated strategy instruction</li> <li>★ Goal setting</li> <li>★ Teach forms/genres of writing (e.g. story grammar, KWL charts, STOP, DARE, TREE strategy)</li> <li>★ Planning (POW strategy, ordering ideas, outlining)</li> <li>★ Drafting (emulating exemplary text, sentence construction)</li> <li>★ Sharing (peer partners, “author’s” chair)</li> <li>★ Evaluating (self-evaluation, self-monitoring)</li> <li>★ Revising and editing (peer revising, COPS editing strategy)</li> <li>★ Publishing (classroom displays, gallery walks, school websites, blogs)</li> </ul>
3	Teach students to become fluent with handwriting, spelling, sentence construction, typing, and word processing	To master foundational skills in order to allocate more attention to composing	<ul style="list-style-type: none"> <li>★ Learning letter formations and writing letters from memory</li> <li>★ Spelling skill development</li> <li>★ Personal spelling dictionaries</li> <li>★ Sentence construction (sentence framing, sentence expanding, sentence combining)</li> <li>★ Introduce typing in 1<sup>st</sup> grade, with regular practice in 2<sup>nd</sup> grade, typing faster than handwriting by the end of 2<sup>nd</sup> or beginning of 3<sup>rd</sup> grade</li> <li>★ Using word processing beginning in 1<sup>st</sup> grade with the ability to produce and revise text using a word processor by the end of 2<sup>nd</sup> grade using spelling and grammar checkers</li> </ul>
4	Cultivate and engage a community of writers	To collaborate with others to fully engage in the writing process utilizing constructive feedback from peers and teachers (teacher as coach)	<ul style="list-style-type: none"> <li>★ Teachers modeling writing</li> <li>★ Provide choice in writing assignments</li> <li>★ Topic journals</li> <li>★ Curriculum and content-related writing prompts</li> <li>★ Collaborative writing: share-the-pen</li> <li>★ Guided peer editing, teaching students how to give and receive feedback</li> <li>★ Teacher-student conferencing with emphasis on meaning over form in earlier drafts</li> <li>★ Author’s chair</li> </ul>

**Middle and high school:** What constitutes good writing instruction at these grade levels? In a 2001 study of high-performing teachers who taught in diverse, urban school settings, they consistently used a combination of approaches that support engaging students at deeper levels of understanding, including:

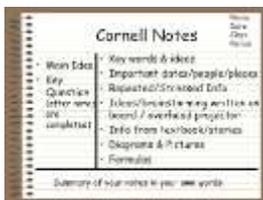


- ★ The use of simulated instruction (modeling, examples and exercises) where students practice new writing skills as part of mini lessons;
- ★ The integration of writing skills into curriculum objectives as a means of applying new skills;
- ★ The integration, rather than isolation, of test preparation skills;
- ★ Making explicit connections across concepts, rather than regarding knowledge and skills as isolated entities;
- ★ Teaching explicit self-regulation strategies for organizing and completing tasks (e.g. the use of self-evaluation rubrics and mnemonics);
- ★ Engaging students in shared conversations to foster multiple perspectives and develop depth and complexity of understanding.

Based on the Common Core State Standards, the following strategies to support college and career readiness standards should guide our selection of UDL strategies and tools (adapted from Honigsfeld & Dove, 2013):

Anchor Standard		Strategies
1	Write Arguments	Use argument tables and graphic organizers designed specifically to: <ul style="list-style-type: none"> <li>★ Identify a claim, find a quote to support that claim, explain the quote</li> <li>★ Expand to include stated opinion, reasons, evidence from other sources</li> <li>★ Side-by-side list of multiple arguments and counterclaims</li> <li>★ Venn diagrams</li> <li>★ Students collaboratively develop surveys and questionnaires to prepare arguments</li> <li>★ Role playing</li> <li>★ Real world contexts</li> <li>★ Dialogic debate prior to writing</li> <li>★ SRSD strategies for planning               <ul style="list-style-type: none"> <li>○ PLANS: pick goals, list ways to meet goals, and make notes, sequence notes</li> </ul> </li> <li>★ SRSD strategies for opinion writing               <ul style="list-style-type: none"> <li>○ TREE: topic clarity, reasons, explanations, ending</li> <li>○ STOP: suspend judgement, take a side, organize, plan more</li> <li>○ DARE: develop topic sentence, add details, reject an argument, ending</li> </ul> </li> </ul>
2	Write Informative/Explanatory Texts	<ul style="list-style-type: none"> <li>★ Close reading (careful, sustained interpretation of a brief passage of text)</li> <li>★ Annotation</li> <li>★ Timeline charts or graphic organizers</li> <li>★ Building a bank of ideas</li> <li>★ Summarizing charts or matrixes to categorize information and new ideas that arise out of readings</li> <li>★ Collaboratively, students create index cards with facts on one topic per card</li> </ul>
3	Write Narrative Text	<ul style="list-style-type: none"> <li>★ Use story board or story timelines</li> <li>★ Use flow charts</li> <li>★ Use sensory charts to develop precise language</li> <li>★ Use graphic organizers to outline the plot structure</li> <li>★ Character charts</li> <li>★ SRSD strategies for planning</li> <li>★ WWW (who, when, where)</li> <li>★ What = 2, How = 2 (What does the character do? What happens then? How does it end? How do the characters feel?)</li> </ul>
4	Produce a written response that has grade appropriate organization and development	To support disciplinary specific writing: <ul style="list-style-type: none"> <li>★ Provide a useful menu of sentence starters</li> <li>★ Paragraph frameworks or model essay models to help students understand the language structure of cause/effect, compare/contrast, cycles, etc.</li> </ul>
5	Edit and Revise	<ul style="list-style-type: none"> <li>★ Teachers model writing using “think-alouds”</li> <li>★ Mentor texts: show and discuss examples of exemplary author’s text</li> <li>★ Feed forward: anticipate student’s needs and provide reminders during guided or independent reading time</li> </ul>

		<ul style="list-style-type: none"> <li>★ Interactive editing: teacher and student share the editing pen and both check for needed edits and revisions</li> <li>★ Peer-editing in pairs or small groups with capture sheets that articulate what to examine</li> <li>★ Self-reflection capture sheets</li> <li>★ Rubrics and checklists</li> </ul>
6	Using technology	<ul style="list-style-type: none"> <li>★ District-approved typing tutorial programs</li> <li>★ Software and online tools to graphically organize ideas</li> <li>★ File sharing tools (e.g. Dropbox)</li> <li>★ Collaborative writing tools (e.g. Google Docs)</li> <li>★ Tools to check the format of citations</li> <li>★ Web-based publishing tools (e.g. Glogster, Wikis, StoryBird)</li> <li>★ Password protected blogging sites</li> <li>★ AT writing supports (e.g. word prediction, speech to text)</li> </ul>
7	Research	<ul style="list-style-type: none"> <li>★ Collaborative small group research projects</li> <li>★ Jigsaw writing: each student contributes a line of research or investigation</li> <li>★ Web-based tools for collaborative writing</li> </ul>
8	Note-taking, organizing and evaluating information	<ul style="list-style-type: none"> <li>★ Scaffolded note taking: guided notes or outlines with key words</li> <li>★ Note-taking templates to organize information from each source</li> <li>★ Graphic organizers that are geared to disciplinary writing and genres (e.g. flow maps, hierarchical maps, compare/contrast, timelines, etc.)</li> <li>★ Web-based notetaking tools</li> </ul>
9	Using information from informational or literary texts	<ul style="list-style-type: none"> <li>★ Checklists or rubrics to gauge the quality of the evidence</li> <li>★ Question answer relationship charts (QAR) to analyze what is in the text, what the writer is thinking, deductions based on the text and original ideas</li> <li>★ Small groups read segments of text and respond to the essential questions to collaboratively develop a summary</li> <li>★ K-W-L strategy: outlining what you know, what you want to know, and what you learned</li> <li>★ SQ3R strategy: survey the text, formulate questions, read actively, recite/write key ideas from the text, review</li> </ul>
10	Range of writing	<ul style="list-style-type: none"> <li>★ Quick writes as a starting point for thinking and dialogue</li> <li>★ Quick diagrams or sketches to represent ideas</li> <li>★ Dialogue journaling to exchange ideas with a peer or teacher</li> <li>★ Response journals to record ideas, opinions, reflections</li> <li>★ 6 + 1 writing traits</li> </ul>



**A few words about notetaking (from “Note-Taking and Secondary Students with Learning**

**Disabilities: Challenges and Solutions, Boyle, 2012):** As AT Specialists, we get asked a lot about notetaking. We know for students with disabilities (and probably for other students as well), the note-taking process is challenging. Students typically have a :

- difficult time discerning important information from unimportant information during lectures; and
- holding lecture information in verbal working memory while processing other information; any interference with this verbal processing affects writing from both a motor (getting physical words to paper) and a meaning (getting the correct meaning to paper) perspective.

**Is scribing the solution?** Not necessarily! The use of a scribe to record notes for the student or providing students with the teacher’s notes or providing audio recordings for later feedback are not always the best solutions because:

- Note-taking allows for *active engagement during lectures*. Students with processing difficulties are often “passive” learners and taking notes actively engages the student in the learning process, thus improving comprehension;
- Note-taking encourages clarification of confusing information and aids encoding during long-term storage;
- The act of writing down information aids memory and recall;
- By not practicing note-taking, with scaffolded supports, students will not learn these skills. At the very least, have the student practice their own note-taking skills while still providing these accommodations.

### What are some good strategies?

- Teaching specific skills (e.g. how to abbreviate words, using note-taking frameworks like “Cornell Notes”)
- Guided Notes: teacher prepared outlines of that lecture that *guide* the student through the lecture. Typically they provide an outline of content and contain designated spaces for students to record basic to increasingly more detailed information. PowerPoint or Google slides can be adapted to incorporate guided note-taking.
- Strategic note-taking instruction: an intervention that includes steps to help students focus on teacher cues (verbal and nonverbal) to discern what’s important and what vocabulary to pay attention to in the lecture; steps to help organize lecture content (such as clustering ideas and summarizing information).

**Smartpens or other recordable/notetaking devices** have been effectively used in higher education settings. In a K-12 or high school district, the recording of teacher lectures or classroom activities is controversial and you would need to check into your district’s specific policies.

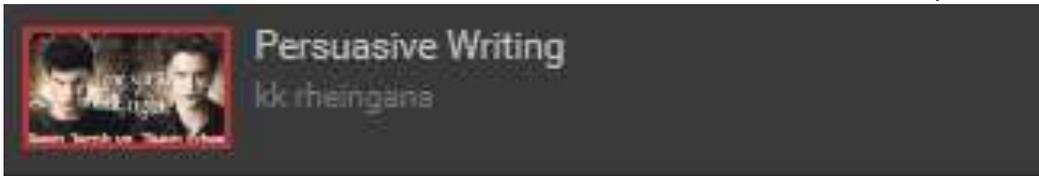


**Teachers can also be more strategic in the types of supports they give students during lectures** including:

- Using verbal or gestural cues:
  - Emphasis cues (the key point is, it’s important to remember that...);
  - Organizational cues (there are six parts to a cell, the four main types of clouds are...); holding up fingers and counting down while you identify key points;  
*When teachers use meaningful lecture cues to prompt ALL students to record the important lecture information in their notes and to remind students to highlight specific information, this alone can boost the number of notes recorded by students and comprehension of the content.*
- Using purposeful pauses, to signal something important is coming that they should probably write down;
- Writing down (or providing in some visual format) important vocabulary and lecture points (*in one study, 88% of what was provided visually showed up in student’s notes*);
- Categorizing an upcoming list of items or providing a title for content about to be presented;
- Repeating or restating relevant information for students in an effort to emphasize its importance and to ensure that students record it in their notes.

**After the lecture:** Students benefit from being taught to review their notes as soon as possible after class. This gives the student a chance to fill in gaps, clarify confusing content or elaborate on lecture points, and also helps students encode information on a deeper level. Pairing students together to review notes is also a successful strategy.

**Interested in seeing/watching examples of UDL principles applied to writing instruction? We have some great videos in our ACA website → Resources → You Tube Video Channel. Check out the section on WRITING, and take a look at:**



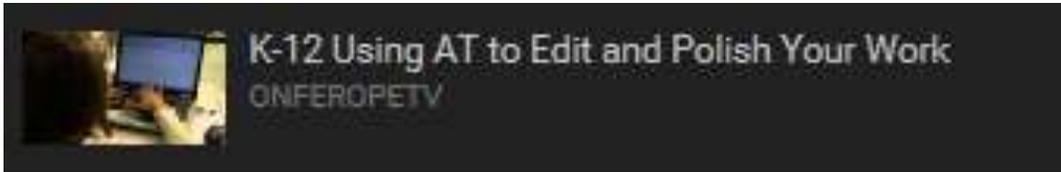
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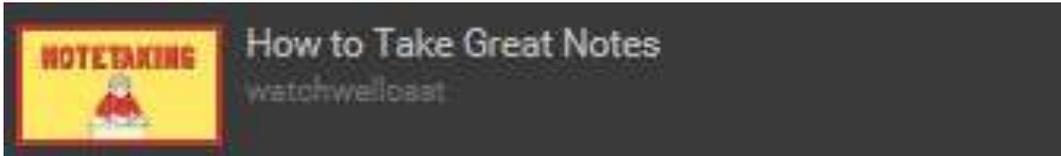
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