Dennis-Yarmouth Regional School District

Instructional Office Newsletter

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Daniel Willingham on Teaching Critical Thinking

In this *Future Frontiers* Occasional Paper, Daniel Willingham (University of Virginia) says there is no disagreement about the importance of teaching critical thinking skills. "In free societies," he says, "the ability to think critically is viewed as a cornerstone of individual civic engagement and economic success. We may disagree about which content students should learn, but we at least agree that, whatever they end up learning, students ought to think critically about it."

But what exactly *is* critical thinking? It's what people need when they play chess, plan strategy for a field hockey game, or design a product, says Willingham. Each situation is fluid and challenging, and there aren't any routine, reusable solutions – hence the need to deploy critical thinking. He offers a "commonsensical" definition of what it looks like for an individual student:

- The thinking is original in the moment, not carried over from a previous situation.
- The thinking is self-directed, not following instructions from another person.
- The thinking respects conventions that make it more likely to yield useful conclusions – for example, *Consider both sides of an issue* and *Offer evidence of claims made*.

(Continued on page 2)

IMPORTANT DATES

November 3rd	**Daylight Savings Time Ends Fall Back**
November 8th	**National STEAM Day**
November 11th	**Veteran's Day (No School)**
November 28th	**Thanksgiving Day (No School)**
November 29th	**Thanksgiving Break (No School)**

IMPORTANT NOTICE:

Central office is a **fragrance-free zone** so please be respectful and plan accordingly when you visit.

Due to one of our members at the CO being highly sensitive to any type of fragrance, we ask that staff visiting/meeting at the Administration building refrain from using any scented products. Fragrances from personal care products, air fresheners, laundry and other cleaning products have been associated with adversely affecting a person's health. We ask that we all work together to make the environment a safe and healthy workplace for everyone.

Thank you very much for your cooperation!

(Continued from page 1)

Willingham notes that another aspect of critical thinking is choosing to think that way when others might not – for example, noticing a way to get a better bargain in a store when most people would just pick up an item and pay. But the main focus of this paper is *successful* critical thinking. "Of course we want students to choose to think," says Willingham, "but we won't be satisfied if their thinking is illogical, scattered, and ultimately fails."

Can critical thinking be taught? Willingham believes it's not something people just pick up; explicit instruction can improve skill in this area. The question is whether students can *transfer* critical thinking skills to new situations. For example, if students are taught how to evaluate the arguments in a series of newspaper editorials, will they be able to apply what they learn to a different medium of persuasion; or if they learn Latin or computer programming, will they think logically in other contexts? Research findings on this are "decidedly mixed," he says.

What about explicitly teaching critical thinking skills in schools – for example, giving students five hours on this subject a week, as some schools are doing? Willingham reports that follow-up studies show very little gain, and there isn't good research on whether the skills transfer to other situations. While we wait for better studies, he believes there's a problem we can see right now: the unrealistic expectation that teaching students to "analyze, synthesize, and evaluate information will improve use of those skills across the board." This leads Willingham to his major conclusion: critical thinking looks different in each subject area, and we should teach it within each subject without expecting that students' gains will necessarily transfer.

"But wait," he says. "Surely there are some principles of thinking that apply across fields of study."

For example:

-"A" and "not A" cannot both be true, whether in mathematics or history.

-Strawperson arguments are always weak.

-Having a conflict of interest makes your case suspect.

-Looking at many instances gives you a more accurate picture of what's going on than looking at only one or two.

True, says Willingham. "The problem is that people who learn these broadly applicable principles in one situation often fail to apply them in a new situation." There's a "surprising failure to deploy useful knowledge." For example, people may have been taught the fourth insight on the list above (looking at lots of instances improves accuracy) but still jump to a conclusion about a person's friendliness based on a single action. One study found that students needed to be told explicitly about the link between two different situations to transfer a skill to a new scenario.

Looking more closely at the failure of transfer, Willingham found that the similarities between disparate situations are at the "deep structure" level, but people tend to look at the surface characteristics. Yes, we understand the principle that lots of data yield a more-accurate analysis, but when we see a person being rude, we conclude that this is a rude person. Surface versus deep structure. Why do we do this? "Probably because the surface structure is explicit, obvious," says Willingham. "And just as obviously, the deep structure is not explicit."

So why not teach deep structure? We can, but it's abstract and difficult for students to grasp. If taught the principle of large data sets, they naturally ask for examples, which takes the teacher back to surface structures.

The good news, says Willingham, is that students (and adults) can make the connection between deep and surface structures if (a) they've learned a lot about the subject, and (b) they see several examples linking deep and surface structure (*Oh, this is that sort of problem*). One technique: ask students to compare two solved problems with the same deep structure but different surface structures.

He says that "extensive stores of knowledge" about a subject are very helpful to critical thinking in open-ended problems. Here's how:

- First, knowledge of parts of similar situations can be "snapped together" when solving complex problems. For example, experienced chess players remember patterns and can quickly see the strengths and weaknesses of their positions and their opponents'.
- Recognizing clumps of information allows working memory to handle more, freeing up mental bandwidth for higher cognition. An experienced chess player sees a king, a castle, and three pawns in a corner and clumps them as one defensive unit.
- Knowing more about a topic makes it easier to deploy thinking strategies; students are more likely to remember something like being sure the experimental and control groups are comparable if they've read several articles on the subject and gone through the same process.

What does all this mean for teachers? Willingham says that while teaching generalizable critical thinking skills is very iffy, he's confident about the usefulness of teaching critical thinking within each subject area. Here's his four-step plan:

- First, identify what critical thinking looks like in each domain – history, mathematics, literature, science, art – and practice using it. In history, it's not enough to teach students to "think like a historian." They need to learn, for example, to interpret documents in light of their sources, corroborating them, and putting them in historical context. Learning to read like a scientist is quite different, since scientific documents are written in a consistent format.
- Second, identify the content knowledge students must know in each domain. This knowledge is "a crucial driver of thinking skills," says Willingham. Knowing the details of a historical era is crucial to doing a critical analysis of an original source.
- Third, decide on the sequence in which students learn factual knowledge and skills. "We interpret new information in light of what we already know," says Willingham "The right preparation makes new learning easier."
- Fourth, decide what skills need to be revisited across K-12, because students will forget a lot. Skills should be practiced with different content, and their repetition must be assured and planned. Cross-grade coordination will greatly improve students' learning of critical thinking skills.

Willingham closes with these assertions: (a) Even in the absence of a comprehensive K-12 plan, individual teachers can still make important contributions to their students' critical thinking; (b) Students can learn these skills at a young age; Piaget's theory about a rigid sequence of thinking capabilities has been proven wrong, says Willingham; (c) All students should be taught critical thinking skills, avoiding the trap of believing that lower-achieving students need the basics first; (d) Assessing critical thinking is expensive and time-consuming because to get accurate information, well-trained assessors need to listen to students thinking aloud while answering challenging questions.

"This means that designers and administrators of

a program to improve critical thinking among students must take the long view," concludes Willingham, "both in the time frame over which the program operates, and especially the speed with which one expects to see results. Patience will be a key ingredient in any program that succeeds."

"How to Teach Critical Thinking" by Daniel Willingham in a June 2019 *Future Frontiers* Occasional Paper (New South Wales, Australia), https://bit.ly/2JIGipw; Willingham can be reached at willingham@virginia.edu.

Advice for Teachers Just Getting Started

(Originally titled "A Letter to New Teachers")

In this *Educational Leadership* article, teacher/speaker/author Chase Mielke offers some pointers for thriving in the rough-and-tumble world of schools:

- ***Find a positive tribe.*** "Why is it that in every single school, there are both teachers who love their work and teachers who have grown bitter?" asks Mielke. "These teachers often work with the same students, in the same conditions, for the same number of days each year. One of the best things you can do as a new teacher is look for the colleagues in your building who still love what they do."

- **Curate the good and don't hoard the bad.** Effective teachers "don't spend the scarce seconds of our days ruminating about past wrongs and rambling about current frustrations," he says. Speak up against injustice, but focus most energy on teaching and learning, and treasure moments of wonder and laughter.

- **Forgive.** Mielke confesses that he's spent too much time ruminating about students who were mean to him and to others, parents who made irrational demands, and colleagues who put him down. Finally he saw "that the only person suffering from my resentment was me" and started practicing meditation and forgiveness. And he forgave himself for his own mistakes.

- **Own your present and future.** Mielke urges new teachers to develop a sense of efficacy – to see that they are the ones most responsible for their own success and well-being. Colleagues helped him make three mental shifts: (a) to a sense of autonomy, focusing on what was under his control – for example, how he greeted students at the door each day, versus what happened to them outside of school; (b) to cognitive flexibility, brainstorming multiple options to challenging situations versus self-victimizing; and (c) to ownership, deciding what actions to take right now. "We do rather than stew," says Mielke.

- **Craft your calling.** Go with your strengths and find ways to shore up your weaknesses, he advises – for example, he enlisted a student to help straighten out his own disorganized desk. Spend more time with the people who build you up and make teaching worthwhile and minimize unhelpful interactions. Be explicit about your teaching philosophy – the why of your work. And pursue passion projects; Mielke says that among the most important things that have kept him from burning out are volunteering to run after-school fitness and music clubs at his high school, building a positive psychology program, and leading PD workshops in the summer. "At the same time," he adds, "I say no to committees and tasks that drain me."

"Be proud that you are in a meaningful profession," Mielke concludes. "But be prepared to fight every year – and every day – to keep your passion alive."

"A Letter to New Teachers" by Chase Mielke in Educational Leadership, September 2019 (Vol. 77, #1, pp. 14-20), https://bit.ly/2jVu3Nj

Is Student Writing Really Worse Than It Was in the Past?

In this Chronicle of Higher Education article, Elizabeth Wardle (Miami University of Ohio) says there are frequent complaints about the miserable state of students' writing from teachers, college professors, journalists, and authors. What's really going on here?

First, says Wardle, people have been complaining about kids' writing since the late 1800s, when schools moved from teaching Latin, Greek, math, and rhetoric to asking students to write original prose. "There is no evidence that student writing over all is any better or worse than it has ever been," she says. "…Students are what they have always been: learners."

Second, the key issue is practice with feedback. "To improve as writers," says Wardle, "students need to write frequently, for meaningful reasons, to readers who respond as actual readers do – with interest in ideas, puzzlement over lack of clarity or logic, and feedback about how to think more deeply and write more clearly to accomplish the writer's purpose." Research shows that grammar worksheets, skill-and-drill exercises, and line editing don't produce good writers. Students need to write and revise in as many classes, internships, and extracurricular venues as possible, making lots of errors and getting correction along the way. "There are no shortcuts," she says.

Third, each teacher needs to help students write to the specific requirements of their subject. "Once we've learned scribal skills such as letters and basic grammatical constructions and conventions," says Wardle, "everything else is quite particular: the genre, the audience, the purpose, whether there should be main claims and if so where, what counts as evidence, what 'succinct' looks like… The characteristics of 'good' writing differ dramatically for history essays, grocery lists, fan fiction, text messages, poetry, grant proposals, lab reports, ethnographies, and opinion columns. We can help our students improve by being explicit and specific about what we mean by 'good writing.'"

Finally, says Wardle, "Teaching writing is everyone's responsibility, but it's not any one person's responsibility to teach all kinds of writing. We are each responsible for helping students understand the written practices that we use in our fields and professions." That means instructors must understand the imperative of specialization and be involved in professional development to support effective practices.

"What Critics of Student Writing Get Wrong" by Elizabeth Wardle in The Chronicle of Higher Education, September 6, 2019 (Vol. LXVI, #1, p. A84), no e-link available; Wardle can be reached at ***wardleea@MiamiOH.edu***

The Wrong and Right Way to Teach Mechanics and Usage

In this Cult of Pedagogy article, Jennifer Gonzalez channels the frustration of educators who spend hours teaching capitalization, punctuation, spelling, parts of speech, and grammar, only to see students continuing to make the same mistakes. "Their teachers' voices rise in chorus," says Gonzalez:

"I taught you this! We went over this! Don't you remember?"

Gonzalez shares the takeaway from decades of research: "Grammar taught in isolation, outside the context of meaningful writing, has been found to have no significant impact on the quality of student writing; in fact, excessive drills can have a detrimental impact on it." In an exhaustive 1984 study, George Hillocks went a step further: "School boards, administrators, and teachers who impose the systematic study of traditional school grammar on their students over lengthy periods of time in the name of teaching writing do them a gross disservice that should not be tolerated by anyone concerned with the effective teaching of good writing."

So what should teachers do instead? Gonzalez summarizes the best thinking on effective ways to teach mechanics and usage:

✓ **Give students plenty of time to read and write.** Building daily lessons around some form of reading and writing workshop is a good place to start, using real books, articles, and other texts that will foster a love of reading. "Regular exposure to lots and lots of good writing," says Gonzalez, "will naturally improve the correctness of students' writing. This is much less likely to happen with scripted reading programs or day after day of reading passages that have no meaningful context." Writing can be informal (journal entries and free-writes) and formal pieces that go through the full writing process. Taking the leap of faith to abandon traditional grammar lessons will free up the time for all this.

✓ **Curate a database of quick grammar lessons. Students should have ready access to high-quality, self-instructing worksheets, YouTube videos, or quick online lessons, to address specific errors they're making – for example, your/you're, there/their/they're. See the article link below for suggestions on Grammar Gap Fillers for common errors students make.**

✓ **Have students do individual lessons as needed. Students can be directed to these resources as needed – or direct themselves as they notice or get feedback on specific errors they're making in their daily writing.**

✓ **Understand that this is a process. "You will never, ever be able to teach in such a way that all students are error-free," says Gonzalez, "and even students who understand the rules will occasionally mess up. Spend 10 minutes on social media and you'll see that most adults are still constantly making grammar errors. So rather than try to fix it once and for all, get your students reading and writing as much as possible and help them develop a personalized, proactive approach to producing correct writing."**

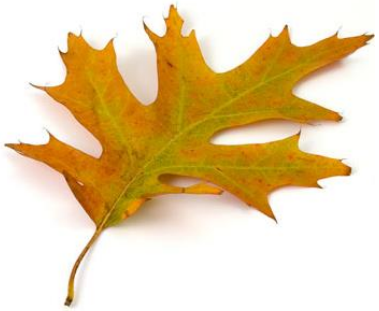
"How to Deal with Student Grammar Errors" by Jennifer Gonzalez in *The Cult of Pedagogy*, July 30, 2017, https://www.cultofpedagogy.com/grammar-spelling-errors/

New Principles for World Language Instruction

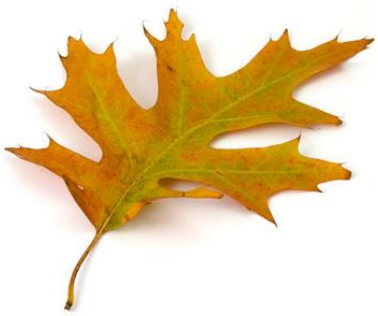
In this Cult of Pedagogy article, Jennifer Gonzalez interviews teacher Rebecca Blouwolff on the evolution of world language teaching from conjugations, scripted dialogues, textbook vocabulary work, and culture tidbits to a much greater emphasis on using the language to communicate. Blouwolff identifies six major shifts in

the field:

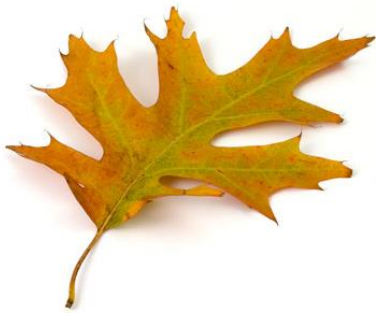
- **Students learn to use the language versus learning about the language**. ACTFL (the American Council on the Teaching of Foreign Languages) recommends that teachers and students use the target language for 90 percent of class time. But this has to be strategic, says Blouwolff: "It can't just be that I get up there and yap on in French and maybe the kids are listening and maybe they're not. It has to be what we call comprehensible input. I'm providing meaningful messages in a way that they can digest them, and I am designing lessons so that I'm getting tons of feedback on which parts they're able to process and understand. I'm scaffolding for them so that from the very first days, they know enough French to be able to respond to me either nonverbally or with very, very simple words."



- **Communicative** activities take priority. The shift is from students being evaluated on answering teachers' questions correctly (the IRE dynamic: initiate/respond/evaluate), to extended teacher-student and student-student interactions in the target language. To orchestrate a language-speaking community, says Blouwolff, "we really need to quell the desire to give that evaluative answer and try to be more interactive, like, Oh really? Tell me more about that. You're going to the movies this weekend? Are you going to go to this movie theater? This shows that we're curious about what our students have to say, so we're encouraging them to keep talking in the language."



- **Grammar is taught in the context of meaningful activities.** The old theory of action was that students needed to learn all the rules before they could use a language. Now teachers focus on small chunks of functional communication with the grammar needed in that context. "I think the fact that we don't tell them it's tricky grammar makes it go down easier," says Blouwolff. "The focus now is really on, do you know enough so that you can convey a message, and who would understand your message?... If we insist on perfection from the get-go, most people just drop out, because that's not how we're built to communicate."



- **Students examine authentic cultural resources.** The new emphasis is on using well-chosen children's books, YouTube videos, pop songs, advertisements, tweets, and finger plays. Blouwolff sometimes plays French real estate videos, and students notice interesting cultural and architectural differences as well as hearing native speakers in action.

- **Instruction is backwards designed.** Following a textbook covered the curriculum ("a ridiculous amount of vocabulary and grammar," says Blouwolff), but often with negative results. She advocates starting with questions like: What do we hope our students will be able to write at the end of this unit? What do we hope they will be able to talk about? What would that sound like with their language level? Then the teacher designs assessments, telling students up front what they'll be expected to do, and then plans lessons with the end in mind.

- **Teachers regularly provide appropriate feedback**. This doesn't mean correcting every error as students speak, says Blouwolff: "Number one, it'll just shut them down. Number

Two, they're never going to remember the correction and reuse it in all likelihood. They're too busy thinking of what they're going to try to say." Better to look for patterns of errors and think about strategic feedback that will build confidence and leverage improvement. ACTFL's proficiency levels give very specific characteristics of language proficiency at each step.

"How World Language Teaching Has Evolved" by Jennifer Gonzalez and Rebecca Blouwolff in *Cult of Pedagogy*, September 29, 2019, https://www.cultofpedagogy.com/world-language/

What Makes a Book Talk Effective?

In this article in The Reading Teacher, Katherine Batchelor and Rebecca Cassidy (Miami University/Ohio) report on fifth and sixth graders' opinions on good book talks by teachers or librarians as they "sold" books to students. Here's what students recommended:

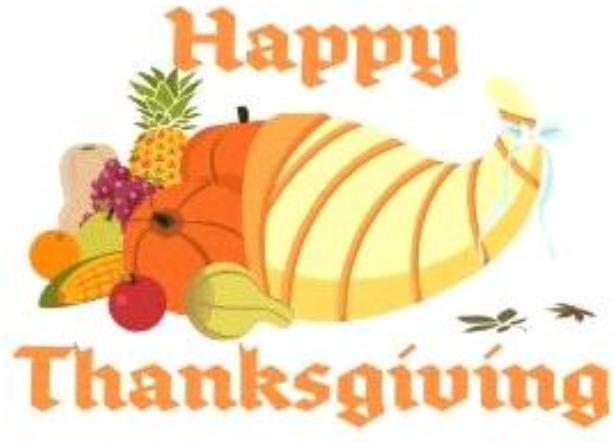
❖ **Show sincerity, enthusiasm, and spirit.** "Say it like you enjoyed the book," said a fifth grader. "Don't be a robot," said another. A big smile and animated expressions were also important.

❖ **Avoid giving away too much**. Giving a summary of the book's basics was important (the cover, author, awards the book has won, what's inside, any special features), but students wanted to be left on the edge of their seats, as with a good movie trailer.

❖ **Tantalize students with a well-chosen excerpt.** "Reading a passage was overwhelmingly the most noted positive feature of the book talks," say Bachelor and Cassidy. "Read from the book. Let students hear the beauty of the prose, the intrigue of the plot, the conflict of the characters, the voice of the protagonist." And when reading, get into accents, intonation, and characters. Ham it up!

❖ **Make it matter**. "Students want to hear how this particular book connects to their lives or what lessons they can glean from the text," say Batchelor and Cassidy. This might happen when the book-talker makes a personal connection to the book.

❖ **Prepare.** Students were critical when the book talker injected a lot of ums, likes, **and pauses**. Flow and a conversational tone were important, as was keeping students engaged and not making them feel "talked at."



❖ Keep it short and sweet. This was partly a matter of editing the presentation, but also of not "babbling," as students put it. Presentations of the same length seemed shorter or longer based on the way they were presented and the book talker's affect.

"The Lost Art of the Book Talk: What Students Want" by Katherine Batchelor and Rebecca Cassidy in *The Reading Teacher*, September/October 2019 (Vol. 73, #2, pp. 230-234), https://bit.ly/2ASQk3j; the authors can be reached at batcheke@miamioh.edu and cassidrd@miamioh.edu.