Literacy and Pedagogy in an Age of Misinformation and Disinformation
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Toward Valuing Evidence: Designing Curriculum for K-12 Students and Beyond

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Learning to value evidence from an early age may be the best way to interrupt the spread of mis/disinformation. K-12 teachers play a leading role in guiding and inspiring children and adolescents to critically examine the claims they confront in school and in the world. The College and Career Readiness Descriptors of the Common Core State Standards (CCSS) explain that when students value evidence they "cite specific evidence when offering an oral or written interpretation of a text. They use relevant evidence when supporting their own points in writing and speaking, making their reasoning clear to the reader or listener, and they constructively evaluate others' use of evidence" (Common Core, "Students"). In the CCSS, valuing evidence begins in kindergarten as students begin to unpack authors' reasoning in the texts that they encounter. The skills required to analyze claims and the evidence used to support them are nurtured throughout the reading standards and writing standards through and beyond students' senior year in high school. For example, Figure 1 shows some of the performance expectations for students as they value evidence in reading and writing throughout their K-12 English language arts education.

These are only a sampling of the CCSS progression from kindergarten through high school, which describe student learning and performance outcomes associated with valuing evidence. Valuing evidence is also a critical aspect of the CCSS for Speaking and Listening, the CCSS for Mathematics, and the CCSS for Literacy across disciplines, as well as the Next Generation Science Standards, all of which are the basis for teaching and curriculum design in most US K-12 schools. To value evidence, one must also be self- aware, and engaged in the process of becoming critically conscious. In other words, recognizing our own inclination to believe or disbelieve information because it fits with preconceptions and beliefs is confirmation bias. Checking our own confirmation bias is a critical aspect of valuing evidence and developing media literacy. Online survival skills outlined by Nicole Allensworth in this volume include practicing self-awareness, especially when undocumented or questionable claims serve your own belief systems. Allensworth suggests that "when a piece of information that you encounter elicits strong feelings, remember to practice self-

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awareness around manipulation." It is fundamental for teachers to promote self-awareness in tandem with a developing critical consciousness from a young age. Melissa R. Sande and Christine M. Battista in their contribution to this collection argue, "Critical consciousness is particularly concerned with the combination of reflective action and critical theorizing"; both are necessary components for

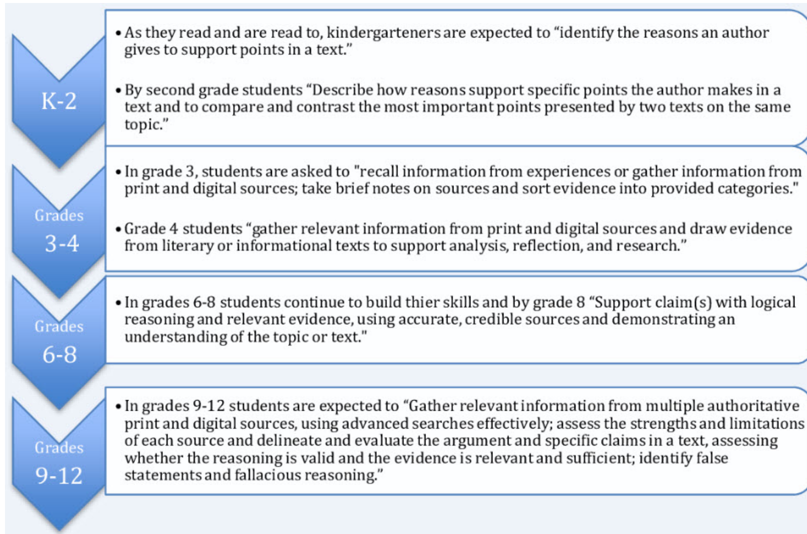

Figure 1. Valuing Evidence: A Sampling of Common Core State Standards, English Language Arts.

identifying and critiquing mis/disinformation. Sande and Battista further explain a process pedagogy, which is developed through the "synchronous work of evaluating information, revising, assessing, and revisiting writing through self-reflexive analysis, peer commentary and professor feedback." In this way, students are taught not only to evaluate the evidence presented in the information that they encounter when reading, but also in their own thinking, speaking, and writing.

The CCSS are clear: a goal for college and career readiness is to value evidence. The challenge for K-12 educators is to select, adapt, design, and use curriculum that engages students in developing the self-awareness and the critical consciousness that is necessary for valuing evidence, determining the credibility of sources, and negotiating the appropriateness of the evidence used in multimedia and print texts. Furthermore, teaching kids the value of evidence is often at odds with the most active communication platforms in our society, which generate a barrage of opinions masked as objective truths that contain little if any credible evidence, with the expectation that the reader will not value evidence and therefore will accept the contents of the messages and pass them on.

These challenges provide an opportunity. The blitz of misinformation spread on social media presents a timely opportunity for K-12 educators to use examples of real and fake news, memes, infographics, and other genre representations in the media, to develop lessons across the grades and disciplines. This work must engage students in critical thinking, analysis, and cognitive rigor. John Sellers in this volume suggests, "there needs to be less teaching to the test—less obedience, less standardization, less focus on 'the answer'—and more enhancement of creativity, awareness of

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multiple stories or perspectives, critique." The curricula that teachers design should inspire more than one interpretation, and make room for dialogue, debate, and respectful disagreement. The activities in school should prepare young people to engage in media-literate behavior and discourses as they negotiate mis/disinformation in various spaces in their lives.

In 2017, I was provided such an opportunity when I was invited to design curriculum for the Expository Reading and Writing Course (ERWC) of the California State University. The ERWC is a college preparatory, rhetoric-based English language arts course for grades seven to twelve designed to develop academic literacy (advanced proficiency in rhetorical and analytical reading, writing, and thinking). A key goal for the ERWC curricula includes building rhetorical literacy: the effective use of language, developed by engaging in reading and thinking practices to identify and understand the rhetorical situation of texts. In 2018-2019, 95,266 grade-twelve students across 638 California schools were enrolled in courses where the ERWC curriculum is either the only or primary English 12 curriculum. These numbers have grown since 2019, as new ERWC modules have been developed and made available to teachers in grades nine through twelve. The module that I was invited to create, and which is now available to ERWC trained teachers, is one of many new modules aligned to the Common Core State Standards for English Language Arts as well as the California English Language Development (ELD) Standards.

Given my task to develop curricula and my interest in creating an opportunity to encourage students to value evidence, I began by speaking to English teachers and teacher candidates across the disciplines about the challenges they face in the climate of mis/disinformation. Teachers shared their concerns that their students were over-reliant on social media for news and information. Teachers also worried about their students' immersion in a virtual world of trolls and both blatant and subtle forms of cyber bullying. Many teachers described what seemed like a battle against their students' inclination to believe, without questioning, what they saw or heard in the media. English teachers especially noted that the hardest problems to tackle were the claims that sounded authentic but were supported by faulty evidence or no evidence at all. Based on the realities that educators encounter in the classroom and the CCSS, I developed the module *Fake News and Bias in Reporting* to disrupt the acceptance of fake news and to promote the value of evidence. The module is centered on the following essential questions:

- Who is responsible for fact-checking the news and preventing the spread of mis/disinformation?
- Are the technology companies like Facebook and Google that provide the platform for spreading information responsible?
- What about news media outlets like CNN or Fox News?
- To what extent are consumers responsible for fact-checking news and information?
- What specifically should be done, how, and by whom?

To develop the module, I drew upon the backwards design principles illustrated in *The Understanding by Design Guide to Creating High-Quality Units* by Grant Wiggins and Jay McTighe. In the process of backwards planning, Wiggins and McTighe suggest starting curriculum design with the end in mind and following a three-step process: 1) determine the *desired outcomes*, 2)

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design the *assessment evidence* that will be used to assess students' performance toward the desired outcomes, and 3) plan the *learning experiences* that will support students to demonstrate their learning and achieve the desired outcomes. The backwards design process invites teachers to plan lessons aligned to essential questions, which are, according to Wiggins and McTighe, the hard-to-answer inquiries that students need to read about, discuss, and grapple with in order to achieve enduring understandings: long-term transferable knowledge and skills.

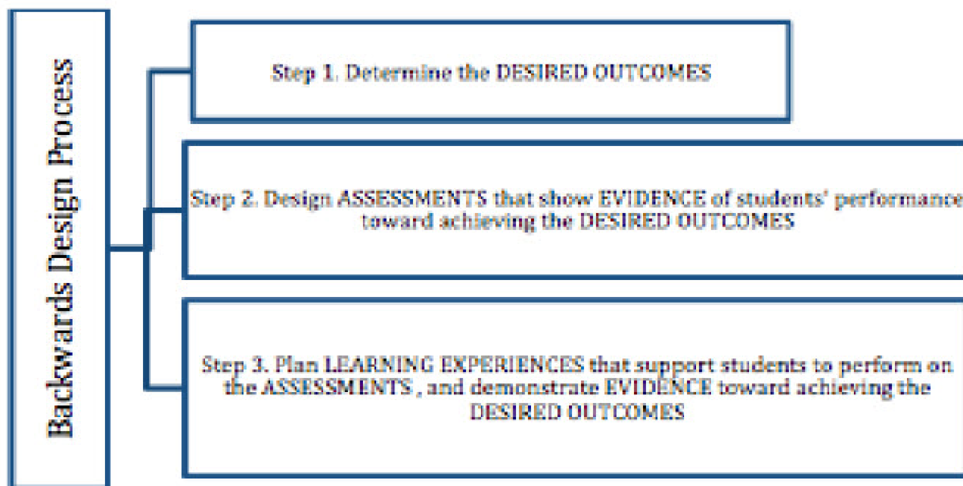

Figure 2. Backwards Planning: A Backwards Design Process Drawn from the Steps Outlined by Wiggins and Mctighe.

The CCSS and California ELD standards are useful for K-12 teachers to determine the first step—the *desired outcomes*—because the standards are clear and concise and describe students' performance. The second step—designing *assessment evidence* of student learning—and the third step—planning *learning experiences* that support students to perform the assessments—should be clearly connected and aligned to the *desired outcomes* or content standards. The *Understanding by Design* principles of curriculum design are further enhanced by the Rigor and Relevance Framework outlined by Willard R. Daggett of the International Center for Leadership in Education. The Rigor and Relevance Framework serves as a complementary set of design principles for creating curriculum. According to Daggett, a high degree of rigor includes high cognitive demand, problem solving, and critical thinking that challenge students to think and perform innovative tasks. Relevance is the authentic real-world application of students' thinking work. The Rigor and Relevance framework suggests that curriculum and instructional design should include both cognitive rigor and relevance. This way, students are engaging in thoughtful analysis; critical thinking; and, the active, creative application of the concepts in the curriculum. Thus, the Rigor and Relevance Framework in tandem with the *Understanding by Design* backwards planning process guided my curriculum design for the ERWC module analyzing the issue of fake news.

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What might it look like to use these principles in tandem? I'll walk through some of my thinking as I developed the ERWC fake news module. My first step, in the spirit of backwards planning, was to ask: What are the *desired outcomes*? What should students know? Understand? Do? What enduring understandings are desired? I selected the desired outcomes in alignment with the 12th-grade CCSS for English language arts: "Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence" (Common Core, "English Language Arts"). Additionally, I wanted to address another set of desired outcomes that include the 12th-grade CCSS, "Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively . . . identify false statements and fallacious reasoning" (Common Core, "English Language Arts"). These desired outcomes promote two enduring understandings: the value of evidence and the skills and dispositions needed to critique and analyze the credibility of claims. Furthermore, the learning goals are both rigorous and relevant as they engage students in demanding cognitive tasks for authentic and real-world purposes.

The second step was to design *assessment evidence,* so I asked myself, how will I know if students have achieved the desired outcomes? How will I evaluate student performance fairly and consistently? In response to these questions, I created the final performance task assessment and rubric containing the success criteria. Specifically, at the end of the module, as their final culminating performance task, students write an opinion-editorial (op-ed) to argue a position using evidence from credible sources. This performance task is cognitively rigorous, as students respond to essential questions, negotiate ideas, and synthesize evidence from a wide variety of texts to support their positions. The task is relevant in its real-world application because the issue is current, of high interest to society, and the op-ed is an authentic genre and venue for presenting arguments to the public. The rubric included argument writing success criteria: a clear and well-articulated claim; introduction of counterclaims and rebuttals, supported by appropriate, well-selected, credible evidence; with reasoning that demonstrates critical thinking, analysis, and creative problem solving.

My final steps in designing the module were to create rigorous and relevant *learning experiences* that support students to perform on the assessments and demonstrate their progression toward the desired outcomes. I asked myself these questions: Now that I know where students are going (desired outcomes) and how I will assess whether they got there (assessment evidence), how will I help them to get there (learning experiences)? What knowledge and skills do they need in order to perform the assessment effectively and achieve the desired outcomes? Specifically, what learning experiences can I provide that will support my students in distinguishing between credible and faulty arguments and ultimately valuing evidence? How can I make these learning experiences rigorous and relevant? To these ends, I designed activities for students to learn how to determine the credibility of sources and grow their ability to gather and cite credible evidence to support a position. In order to plan both rigorous and relevant learning experiences, I selected several current and authentic texts from *NPR*, *The Los Angeles Times*, *The Washington Post*, *The Christian Science Monitor*, the *PBS News Hour*, *PolitiFact*, and *Smithsonian.com*. All of the texts provide information and evidence to support any position the students might take in preparation for writing their op-ed. Several texts suggest that media and technology companies should take responsibility for stopping the spread of fake news,

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and other texts illustrate ways that consumers can fact-check the news.

Each module text provides an opportunity for students to analyze the evidence and reasoning of the author, as well as to collect their own evidence for their op-ed. Because this module is centered on issues in the media, it was also important for the module to include multi-media texts. I included videos, podcasts, and websites for students to learn from and practice fact-checking. Some of the websites students visit in the module include *abcnews.com*, *abcnews.com.co*, *yournewswire.com*, *cnn.com*, *snopes.com*, *politifact.com*, and TinEye (tineye.com) to conduct a reverse image search. The module includes "Try It" activities," in which students are presented with instances of both real and fake news and information, and they learn how to identify mis/disinformation by trying out some of the methods that professional fact-checkers use (see Jennifer Hofmann and Joanna Geary in this volume). These activities are high interest, authentic, and relevant to the lives of students.

In the process of wrapping up the module, I revisited the overarching design principles: I pored back over the lessons and activities of the module to make sure that there was a balance of rigor and relevance. I created opportunities where the students, not the teacher, were doing the critical thinking and creative work, and the teacher was more a "guide on the side" than a "sage on the stage." I checked to make sure I created opportunities for students to engage in extended academic discourse, separate facts from opinions, understand bias, and think critically about what they see in social media and media in general in order to distinguish between what is fact and evidence-based and what is not. I also revisited the congruences among the desired outcomes, the assessment evidence, and the learning experiences to make sure they are all aligned to and in support of each other.

The grade-twelve ERWC fake news module was made available to ERWC-trained teachers in the fall of 2018. However, no curriculum is complete until practicing teachers adapt it and make it come alive in their classrooms. During the 2018-2019 academic year, I was invited to join a group of English teachers, grades nine through twelve, who were collaborating to learn to teach the new ERWC modules that are aligned to the English Language Development standards, including the fake news module. Through their close collaboration, participating teachers identified three instructional foci for the academic year, all of which support students in valuing evidence:

1. Teaching students to integrate source material (textual evidence) into their writing.
2. The close and careful analytic reading of source material and vocabulary.
3. Supporting students to engage in respectful academic discussions focused on evidence.

This team of teachers agreed that in order for their students to select credible and appropriate evidence from the texts they were assigned, and explain how that evidence supports their positions, students have to fully comprehend the evidence and the source material as a whole. Even more fundamentally, students must value evidence. Therefore, the teachers' goals for collaboration focused on engaging students in close and careful reading and on discussing the validity of claims and the credibility of the supporting evidence used in each of the texts that they read, with attention to new and unfamiliar vocabulary. Research on the impact of this teacher collaboration on student learning outcomes suggested a positive relationship. Findings illustrated how the shared teaching practices engaged students in valuing evidence and promoted improved student learning outcomes (Pella).

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Through my close engagement with these teachers as they analyzed each of the ERWC modules; unpacked and adapted the desired outcomes; tailored the assessment evidence and further developed, scaffolded, and extended the learning experiences to suit their specific students, I recognized ways to further enhance the fake news module.

In the following year, 2019-2020, I had the unique opportunity to co-teach the grade-twelve fake news module in three senior English classes. I spent five weeks with the teacher, doing a demonstration lesson in his first period class, co-teaching in his second period class, and observing him teach the third period class. Because the issue of fake news is dynamic, we updated to then-current videos and texts to include short video clips of members of Congress interviewing Mark Zuckerberg, CEO of Facebook, about Facebook's fact-checking policies for political ads. We added several new texts taking varying positions on the issue of whether or not social media companies should fact-check political ads; and we designed various ways to scaffold the viewing, reading, writing, and discussion of these new additions. Teachers using this module will have to continue to update it, as the issue of fake news and dis/misinformation continues to morph. Nonetheless, throughout the five weeks, students were highly engaged in the activities and very interested in the topics of fake news and media literacy. Students' culminating task at the end of the module was to argue, by writing an op-ed in response to the prompt: To what extent are news media and technology companies responsible for fact-checking information and to what extent are consumers responsible? Who should do what and how?

In the class of high school seniors where I co-taught the module, the overwhelming majority of students argued that even though corporations should be held somewhat accountable for mis/disinformation and fake news, consumers themselves are primarily responsible for limiting the spread of fake news by engaging in the same practices as professional fact-checkers. Students argued that fake news is a serious problem, which should be primarily solved by consumers, who most students argue, should engage in fact checking for themselves. The majority of students' essays illustrated that students do hold media and technology companies responsible for fact-checking, yet students argued that these companies can't be trusted and are not reliable to be solely responsible for fact-checking. Instead, most students argued that although technology companies and the media share the responsibility for preventing the spread of mis/disinformation, consumers bear the most responsibility.

Their essays suggest that these students value evidence; they want to know whether or not the information they read on social media and other forms of media is factual. However, they mistrust the media and technology companies to screen information effectively, so they argue that the best way to make sure the information that they consume is factual is to do the fact-checking themselves. Unfortunately, just a couple of months after these high school seniors studied and wrote about fake news, the country shut down, and they lost their final semester of high school in response to the COVID-19 pandemic. The pandemic, in tandem with the murder of George Floyd by Minnesota police and the response by the Black Lives Matter movement for racial and social justice, captured the news cycle for months. The class of 2020, like all of the country and world, became immediately dependent on facts, truth, and accuracy in reporting. The world was confronted with

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an unprecedented need for the government, media, and all layers of society—international, national, statewide, and local—to present accurate, scientifically researched, and evidence-based information and not leave fact-checking to individuals.

I would argue that if we had the chance to ask these students the same question three months later, many of them might argue that fact-checking should not only be the pursuit of concerned individuals but a social imperative for the public good. Teachers using this module today have a whole new set of materials to add to the module about fake news, facts, and mis/disinformation during a global pandemic. I encourage all teachers using the fake news module, or similar materials of their own design, to add current examples of facts and mis/disinformation provided by various entities reporting or sharing information about movements for racial and social justice and engage students in evaluating not only the credibility of such information but the positive and negative impacts of sharing mis/disinformation on society.

Teaching the value of evidence is clearly in the K-12 CCSS for English Language Arts and other subjects, but it is up to teachers and school communities to prioritize the development of curriculum to support it. All teachers, including university faculty, can engage the principles of backwards planning, infused with rigor and relevance, to foreground the value of evidence as not only an academic disposition but also a social responsibility. It is in everyone's best interests not to grow new generations of young people with what I see as a growing *fake news fatigue*: the exhaustion from so much mis/disinformation that they mistrust all forms of media and information whether it is factual or not. A promising way to interrupt the development of fake news fatigue is for teachers at all academic levels to design curricula that encourage students to value evidence, evaluate the credibility of claims and sources, and separate fact from opinion. Furthermore, from a young age, all members of society must insist that media, technology companies, government, and private industry have a social and moral imperative to do the same.

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