Date of Hearing: April 3, 2024

ASSEMBLY COMMITTEE ON EDUCATION
Al Muratsuchi, Chair
AB 2876 (Berman) – As Amended March 11, 2024

SUBJECT: Pupil instruction: media literacy: artificial intelligence literacy: curriculum frameworks: instructional materials

SUMMARY: Requires the Instructional Quality Commission (IQC) to ensure that instructional materials that it recommends to the State Board of Education (SBE) for adoption after January 1, 2025, include media literacy content; to consider incorporating artificial intelligence (AI) literacy content into the mathematics, science, and history-social science curriculum frameworks when those frameworks are next revised; and to ensure that the mathematics, science, and history-social science instructional materials that it recommends to the SBE for adoption after January 1, 2025, include AI literacy content. Specifically, **this bill**:

1) Defines "AI literacy" to mean the knowledge, skills, and attitudes associated with how AI works, including its principles, concepts, and applications, as well as how to use AI, including its limitations, implications, and ethical considerations.

2) Requires the IQC to ensure that the instructional materials for pupils in kindergarten or any of grades 1 to 8, inclusive, that it recommends to the SBE for adoption after January 1, 2025, include media literacy content.

3) Requires the IQC to consider incorporating AI literacy content into the mathematics, science, and history-social science curriculum frameworks when those frameworks are next revised after January 1, 2025.

4) Requires the IQC to ensure that the mathematics, science, and history-social science instructional materials for pupils in kindergarten or any of grades 1 to 8, inclusive, that it recommends to the SBE for adoption after January 1, 2025, include AI literacy content.

EXISTING LAW:

1) Requires that, when the English language arts/English language development (ELA/ELD) curriculum framework is next revised, the IQC consider incorporating the Model Library Standards, and consider media literacy standards at each grade level; and requires the IQC to consider incorporating media literacy content into the mathematics, science, and history-social science curriculum frameworks when those frameworks are next revised.

2) Defines the following terms:

   a) "Digital citizenship" means a diverse set of skills related to current technology and social media, including the norms of appropriate, responsible, and healthy behavior; and

   b) "Media literacy" means the ability to access, analyze, evaluate, and use media and encompasses the foundational skills that lead to digital citizenship. (Education Code (EC) 51206.4)

1) Requires the California Department of Education (CDE), by July 1, 2019, to make available to school districts on its website a list of resources and instructional materials on media literacy, including media literacy professional development programs for teachers. (EC 51206.4)

2) Requires the SBE to adopt standards, rules and regulations for school library services. (EC 180101)

3) Requires the Superintendent of Public Instruction (SPI) to convene a computer science strategic implementation advisory panel to develop recommendations for a computer science strategic implementation plan, and requires the panel to submit recommendations for a strategic plan to the SBE by January 15, 2019.

4) Requires the computer science plan to include, at a minimum, recommendations on all of the following:

   a) Broadening the pool of teachers to teach computer science;

   b) Defining computer science education principles that meet the needs of students in all grades; and

   c) Ensuring that all students have access to quality computer science courses.

5) Requires the IQC to consider developing and recommending to the SBE, on or before July 31, 2019, computer science content standards for kindergarten and grades 1 to 12 pursuant to recommendations developed by a group of computer science experts.

6) States that if a school district requires more than two courses in mathematics for graduation from high school, the district may award a student up to one mathematics course credit for successfully completing a "category C" approved computer science course. (EC 51225.35)

7) Requires the California State University (CSU), and requests the University of California (UC), to develop guidelines for high school computer science courses that may be approved for the purposes of recognition for admission. (EC 66205.5)

8) Through regulation, authorizes holders of credentials in mathematics, business, and Instructional Technology Education (ITE), as well as holders of supplementary authorizations in computer science, to teach computer science. (California Code of Regulations, Title 5, Section 80005)

FISCAL EFFECT: Unknown

COMMENTS:

Need for the bill. The author states, "AI is not new, but it continues to rapidly evolve and become increasingly capable of dramatically transforming the way we live in ways we previously could not have imagined when the term was first coined in 1957. However, society can only achieve maximum value from AI only if citizens know how to use it, and use it responsibly. Invariably, fear and lack of understanding of AI will only hinder efforts to harness

its vast potential for good while also mitigating actual harms. In the battle to understand what is a constantly, and rapidly evolving technology, education must become a prominent focus of government and role for our educational institutions. Developing AI literacy in public schools is an imperative first step to better preparing our future public and private workforces, as a well as increasing general knowledge and awareness around the responsible use of AI. Additionally, the bill would strengthen California's existing media literacy policies to ensure media literacy is incorporated into new instructional materials."

What should students learn about AI? This bill requires that requires the IQC to consider incorporating AI literacy content into the mathematics, science, and history-social science curriculum frameworks when those frameworks are next revised after January 1, 2025. It defines AI literacy to mean "the knowledge, skills, and attitudes associated with how artificial intelligence works, including its principles, concepts, and applications, as well as how to use artificial intelligence, including its limitations, implications, and ethical considerations."

According to the CDE, incorporating AI skills and computer science standards into K-12 education can equip students with the knowledge and abilities necessary to navigate and contribute to an increasingly AI-powered world. This integration fosters computational thinking, problem-solving, and innovation, paving the way for students to become AI developers and creators. Infusing AI skills into the curriculum ensures that students are prepared to engage with and contribute to emerging technologies that are reshaping industries and society.

The CDE notes that a framework called "The Five Big Ideas of AI" can provide "a solid foundation for AI education that aligns with the broader educational mission of preparing students for success in college/career for today and into the future." These five ideas are:

- Perception: Understanding how AI systems perceive the world is fundamental. This includes image and speech recognition, natural language understanding, and sensory data processing. Integrating this idea into education enables students to comprehend how AI systems interact with the environment.

- Representation: AI relies on data and information representation. Teaching students how data is structured and organized empowers them to work with AI models and make informed decisions about data usage and manipulation.

- Reasoning: AI systems use reasoning to make decisions and solve problems. Integrating this idea helps students develop critical thinking skills, algorithmic reasoning, and the ability to assess the logic behind AI decisions.

- Learning: Machine learning is at the core of AI. Teaching students about machine learning algorithms, training models, and the concept of learning from data prepares them to understand the AI systems that surround them.

- Societal Impact: Recognizing the societal impact of AI, including ethical considerations and bias, is essential. This idea encourages students to engage in discussions about AI's role in society and its ethical implications.

What is media literacy? There are varying definitions of media literacy, but most identify key skills as the ability to access, analyze, evaluate, and create media in a variety of forms.

The Center for Media Literacy defines media literacy as "a 21st century approach to education. It provides a framework to access, analyze, evaluate, create and participate with messages in a variety of forms — from print to video to the Internet. Media literacy builds an understanding of the role of media in society as well as essential skills of inquiry and self-expression necessary for citizens of a democracy."

What does media literacy education look like? The CDE lists the following examples of media literacy activities in different grade spans on its website:

- Elementary students use a library catalog to locate a book on recycling, which informs their task of photographing examples of recycling in their neighborhoods to share on their class wiki. In this example, students are accessing information through the library catalog, using it to inform their task. They are then using media to share information through photography on their class wiki—this involves production, communication, and following norms of online behavior with digital citizenship.

- Middle schoolers use a spreadsheet to organize data they collect about pets' exercise habits, which they will analyze for a science fair project. In this example, students are using technology to use information effectively. They then analyze that information to arrive at conclusions for a project—that project will involve further skills in communication of that information to a particular audience.

- High schoolers locate articles in a database about data privacy, which is the basis for the students' video production that gives recommendations for teens to protect personal information. In this example, students are accessing information through the database, and then analyzing that information to produce a video, involving communication skills. The topic is data privacy, which includes elements of digital citizenship.

Three additional examples of media literacy lessons from publicly available curricula are shown below:

- Through the Media Smarts curriculum (in use in Canada) students in kindergarten to third grade can learn how to identify advertising through a lesson titled "Can you spot the ad?" with the objective of teaching students about the concept of branded content, and differences between branded and non-branded images and videos in online and offline contexts.

- Through the Cyber Civics curriculum for middle school students, students learn the difference between "consuming" and "producing" media, how to read and create visual media and become less susceptible to visual manipulations, receive safety training related to the consequences of "sexting," and learn how misinformation can spread via the Internet and social media and even find its way into the news.

- Through the Facing History and Ourselves media literacy unit titled "Facing Ferguson: News Literacy in a Digital Age," high school students investigate the choices and challenges facing journalists as they report on a story, explore the impact of social media on the traditional news cycle and understand the role it can play in influencing public opinion and the press,

develop critical thinking and news literacy skills to find reliable information to make decisions, take action, and responsibly share news through social media, and consider their role as citizens in a democracy and their responsibilities as civic participants and citizen watchdogs.

Other resources are available online, such as the curriculum developed by Common Sense Media's K–12 Digital Citizenship Curriculum, which focuses on media balance and well-being; privacy and security; digital footprint and identity; relationships and communication; cyberbullying, digital drama and hate speech; and news and media literacy.

Research on the need for instruction in media literacy. Research on the need to provide instruction in media literacy includes:

- A 2022 Pew Research Report found that the share of teens who say they use the internet about once a day or more has grown since 2014-15. Today, 97% of teens say they use the internet daily, compared with 92% of teens in 2014-15 who said the same. The study also found that 46% of teens say they use the internet almost constantly, up from only about a quarter (24%) of teenagers who said the same in 2014-15. Social media use has also grown for younger kids. About half of parents of children ages 10 to 12 and 32% of parents of kids ages 7 to 9 reported their child used social media apps in 2021. (Clark, 2021)

- A 2019 Stanford University study gauged students' ability to evaluate digital sources on the open internet. 96% of high school students surveyed failed to consider that ties to the fossil fuel industry might affect the credibility of a website about climate change, and more than half believed a grainy video on that claimed to show ballot stuffing (which was actually shot in Russia) constituted "strong evidence" of voter fraud in the United States. (Breakstone, 2019) Another study found that 82% of middle school students struggled to distinguish advertisements from news stories. (Wineburg, 2016)

According to the Stony Brook University Center for News Literacy, the Digital Age poses four information literacy challenges for civil society:

1) The overwhelming amount of information that floods over us each day makes it difficult to sort out reliable from fabricated information;

2) New technologies to create and widely share information make it possible to spread misinformation that looks like it's from an authoritative source;

3) The conflict between speed and accuracy has escalated. We all want information as quickly as possible, but accelerating the distribution of information in the Digital Era has also increased the chances that the information will be wrong; and

4) The Internet and Social Media make it much easier to select only the information that supports our preexisting beliefs, reinforcing rather than challenging them.

Information literacy in California Model School Library Standards. The California Model School Library Standards for California Schools, adopted by the SBE in 2010, incorporate "information literacy" skills, in which students "learn to access, evaluate, use, and integrate information and ideas found in print, media, and digital resources, enabling them to function in a

knowledge-based economy and technologically oriented society." "Information" is defined broadly to include words (whether printed or spoken), visual images (including photographs and artwork), and music.

These standards are organized into four concepts (accessing, evaluating, using, and integrating information) which contain standards spanning all of the grades. In the area of evaluating information, students are expected to be able to determine the relevance of information; assess the comprehensiveness, currency, credibility, authority, and accuracy of resources; and consider the need for additional information.

The state's content standards for ELA also include at least one reference to media literacy. In grades 9 -12, students are expected to learn to "Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source."

The Committee may wish to consider that significant changes in media consumed and produced by students since 2010 may necessitate a revision of these standards.

Media literacy resources listed on the CDE website. Pursuant to SB 830 (Dodd), Chapter 448, Statutes of 2018, the CDE has listed on its website resources and instructional materials on media literacy, including media literacy professional development programs for teachers. This list includes ten curriculum resources, eleven resources for professional development, and five resources for media production.

Arguments in support. TechNet writes, "AB 2876 will ensure that all K-12 students receive instruction in AI literacy by directing the Instructional Quality Commission (IQC) to incorporate AI literacy content into the mathematics, science, and history-social science curriculum frameworks when those frameworks are next revised. These materials will cover the knowledge, skills, and attitudes associated with how artificial intelligence works, including its principles, concepts, and applications, as well as how to use artificial intelligence, including its limitations, implications, and ethical considerations. Incorporating this information into existing curricula will dispel the stigma and mystique of the technology, not only helping students become more discerning and intentional users and consumers of AI, but also better positioning future generations of workers to succeed in an AI-driven workforce and hopefully inspiring the next generation of computer scientists.

The importance of this bill cannot be overstated: if California is to successfully harness the tremendous promise of this technology, it is vital that we place greater emphasis and resources on preparing students and arming them with the foundational knowledge and skills necessary to identify, understand, and successfully utilize all kinds of AI that they may encounter in their future workplaces and in their daily lives. Just like reading, writing, and arithmetic, digital literacy and AI literacy are basic skills that children need to develop if they are to succeed in the modern world."

Recommended Committee amendments. Staff recommends that this bill be amended to require, the next time the SBE adopts instructional materials in ELA/ELD, the IQC to consider including media literacy standards in the evaluation criteria for those materials.

Related legislation. AB 873 (Berman), Chapter 815, Statutes of 2023, requires that, when the ELA/ELD curriculum framework is next revised, the IQC consider incorporating the Model Library Standards, and consider media literacy standards at each grade level; and requires the IQC to consider incorporating media literacy content into the mathematics, science, and history-social science curriculum frameworks when those frameworks are next revised.

AB 2652 (Muratsuchi) of the 2023-24 Session would require the SPI, in consultation with the SBE, to convene a working group for the purpose of exploring how AI and other forms of similarly advanced technology are currently being used in education, as specified.

SB 1235 (Gonzalez) of the 2023-24 Session would require a public institution of higher education to establish the Artificial Intelligence and Deepfake Working Group, to evaluate and advise the Legislature and the public on the relevant issues and impacts of AI and deepfakes.

AB 787 (Gabriel) of the 2023-24 Session would require the SPI, in consultation with the SBE and an advisory committee, to identify best practices and recommendations for instruction in digital citizenship and media literacy and to report these recommendations to the Legislature, and to conduct a survey on the ways in which digital citizenship and media literacy education is being integrated into the curriculum.

AB 1576 (Calderon) of the 2019-2020 Session would have required the Secretary of Government Operations to appoint participants to an AI working group on or before July 1, 2020 to evaluate the uses, risks, benefits, and legal implications associated with the development and deployment of AI by California-based businesses. This bill was held in the Senate Appropriations Committee.

AB 2284 (Gabriel) of the 2021-22 Session would have required the SPI to allocate funding to school districts, county offices of education, charter schools, and the state special schools, for the purchase of standards-aligned instructional materials in media literacy and digital literacy and for professional development in that content. This bill was held in the Assembly Appropriations Committee.

AB 2064 (Irwin) of the 2021-22 Session would have established the Media Literacy Through Critical Thinking Program in the California State Library for purposes of supporting media literacy across multiple languages for individuals and developing media literacy skills for individuals to help navigate issues of public health and representation. This bill was held in the Assembly Appropriations Committee.

SB 830 (Dodd), Chapter 448, Statutes of 2018, requires the CDE to make available to school districts on its website a list of resources and instructional materials on media literacy, including media literacy professional development programs for teachers.

SB 135 (Dodd) of the 2017-18 Session would have required the IQC to develop, and the SBE to adopt, reject, or modify, a model curriculum in media literacy. This bill was held in the Assembly Appropriations Committee.

SB 155 (Gomez) of the 2017-18 Session would have required the IQC to develop a model curriculum in media literacy, and would have required the CDE to develop an online

professional development module to support the model curriculum. This bill was held in the Assembly Appropriations Committee.

SB 203 (Jackson) of the 2017-18 Session would have required the CDE to identify best practices and recommendations for instruction in digital citizenship, internet safety, and media literacy, and would have required, beginning in the 2019–20 school year, school districts to annually review their policies on those topics. This bill was held in the Senate Appropriations Committee.

SB 947 (Jackson) of the 2017-18 Session would have required the SPI, in consultation with an advisory committee, to identify best practices and recommendations for instruction in digital citizenship, internet safety, and media literacy. This bill was vetoed by the Governor, who stated:

> The subject matter of this bill is more properly the responsibility of local school districts. Moreover, the topics covered here are already contained in our state's English Language and Social Science Frameworks or in the K-12 Model Library Standards.

REGISTERED SUPPORT / OPPOSITION:

Support

California Association of Collectors
California Chamber of Commerce
Computer and Communications Industry Association
Insights Association
Outschool
Software and Information Industry Association
Technet
Zillow

Opposition

None on file

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