MEMO

To: Dr. Noah Kaplan

From: Isabel Dotson

Date: 21 September 2025

Subject: Topic for Semester-Long Project: AI Literacy

For my semester-long project in this course, I would like to prepare an informational report on **AI literacy** for the school board of Dickenson County, Virginia. The report will provide this group of non-expert decision-makers with a comprehensive overview of what AI literacy is, what skills and knowledge it includes, and how it impacts future job readiness. The purpose of the report is not to persuade, but to educate this school board so they can make informed decisions about how or if to include AI literacy in their high school curriculum.

Project Overview

Artificial intelligence (AI) is becoming part of everyday life in schools, workplaces, and communities, yet many people remain unfamiliar with how AI systems function, what their limitations are, and what responsible use entails. They are likely also unaware of how much AI literacy could influence job readiness for high school and college students.

AI literacy has been described as "building [for students] a foundation of competencies that empower learners to navigate an AI-integrated world with confidence and purpose" [1]. It involves helping students understand what AI is, how it works, and how to use it responsibly, while also developing practical skills such as writing support, problem-solving, and personalized learning.

Importantly, AI literacy connects directly to workforce readiness, as knowledgeable students "can better prepare for the future job market, where AI skills will be highly sought after" [2]. Although AI is expected to impact growth in some job sectors, "the share of businesses currently using AI in the production of goods or services rose from around 4% in early 2023 to 8.7% by mid-2025" [3]. The overall growth in AI-specific job postings has increased from "3,780 unique instances in April 2010 to around 82,980 in 2025, despite declines in 2023 after several rounds of layoffs from tech giants" [3]. This data points to a steady increase in the need for AI literacy among those seeking jobs.

My informational report will define AI literacy in clear terms, review existing frameworks, and identify skills commonly emphasized in literacy programs. It will also summarize

examples of how schools and organizations are introducing AI literacy and highlight current discussions about equity and accessibility in AI education. The aim is not to argue for one solution but to present accurate, unbiased information that supports informed decision-making by non-expert readers.

To ground this topic, the report will be prepared for decision-makers in Dickenson County, in Southwestern Virginia, a community that has long faced economic challenges. The county's population has fallen to about 14,100 in 2020, an 11.19% decline from 2010 census data [4]. Unemployment currently hovers around 40%, and the median household income is $43,831 [5]. In terms of education, a marker of employability, only about 11% of residents hold a bachelor's degree compared with 43% statewide, while 42.9% of the population has a high school diploma or an equivalent (GED) [6].

At the same time, investments such as a $169,000 grant in 2023 to expand "low earth orbit space-based broadband to unserved and/or underserved children" demonstrate a commitment to building digital access. By situating AI literacy within this context, the report will show how communities like Dickenson County could benefit from programs that link education, equity, and future job readiness.

Literature Review & Source Identification

Below are five sources I plan to use. Each contributes information about AI literacy definitions, frameworks, or applications.

1. "Understanding AI Literacy." Stanford Teaching Commons, Stanford University, Available: https://teachingcommons.stanford.edu/teaching-guides/artificial-intelligence-teaching-guide/understanding-ai-literacy

   This module uses a specialized framework to help teachers develop AI literacy skills that can be shared with their students. This literacy framework focuses on four areas: functional, ethical, rhetorical, and pedagogical. Each area is defined, with examples, and resources are provided for each. The module also uses what it calls a "human-centered approach" to teaching AI literacy, which places humans in control of interactions. The site also provides teachers with practice exercises that consist of scenarios to which they can respond.

   - "In centering human agency, we recognize individual and collective responsibility and accountability concerning the appropriate use of AI technology, which includes mitigating negative impacts and assuring equitable benefits for all."
   - "A supportive learning environment can help students develop habits that leverage metacognitive reflection, self-examining what they have learned and how they have learned it to identify when they access their zone and learn

deeply. In contrast, learners without the right support might mistakenly believe that the ability to complete a task quickly and easily indicates deep learning."

2. Annapureddy, Ravinithesh, Alessandro Fornaroli, and Daniel Gatica-Perez, "Generative AI Literacy: Twelve Defining Competencies," ACM Digital Libraries, Feb 13, 2025. Accessed Sept 12, 2025. Available: https://dl.acm.org/doi/10.1145/3685680.

The article *Generative AI Literacy: Twelve Defining Competencies* lays out a roadmap for learning how to use generative AI in smart and responsible ways. It introduces twelve main skills, starting with basic knowledge of what AI is and moving up to more advanced abilities like customizing and fine-tuning models. These skills include knowing what generative AI can and can't do, learning how to use different tools, spotting when content is AI-made, checking the quality of AI outputs, writing good prompts, and understanding the ethical and legal issues around AI. The authors also emphasize the need to keep learning as the technology changes. They argue that schools, workplaces, and governments should teach and apply these skills so that people can use generative AI effectively, avoid risks, and make responsible choices

- "[U]nderstanding generative AI involves not just the technical aspects of the algorithms or tool utilization but also bringing significant attention to the ethical and practical considerations in its use."
- "AI literacy does not equate to computing literacy, nor is computing literacy necessary for AI literacy, as individuals may recognize, learn about, and use AI without necessarily being able to program or having experience in computer science and engineering."

3. Anders, Brent, Use of AI in Industries and Organizations 2025, Sovorel Center for Teaching and Learning, OER. Accessed Sept. 15, 2025.

This report highlights how artificial intelligence is rapidly transforming workplaces and the skills people need to succeed, noting that most companies plan to expand its use. The report stresses the importance of AI literacy for students and workers, covering ethical use, bias, and effective application. It reviews ten fields — including marketing, healthcare, engineering, teaching, cybersecurity, law, and government — showing how AI supports tasks like content creation, diagnosis, design, and decision-making. Each field has specific AI subskills employees must learn. The report calls on educators to integrate AI training so future professionals can adapt and thrive.

- "All students and employees must develop these needed AI skills and additional subskills (both foundational AI Literacy and field specific AI skills) in order to be able

to adapt and thrive in our new technologically advanced world that is continually being infused with additional applications of generative AI" (3).
- "By realizing how generative AI is already being used in the workforce and other organizations . . . , academia can ensure that they are fully preparing students to succeed; in this way academia can lead in a proactive manner" (4).

4 . Jones-Vlasceanu, Juliet, "AI's Transformation of Career Preparation," AACSB, July 5, 2023, Accessed Sept. 17, 2025. Available: https://www.aacsb.edu/insights/articles/2023/07/ais-transformation-of-career-preparation

This article explains how artificial intelligence is reshaping industries and the skills workers need. Businesses are adopting AI to cut costs and boost revenue across areas like marketing, finance, and supply chains. Job postings increasingly require AI skills, and studies show that many careers have a high percentage of tasks exposed to AI tools. The author argues that traditional career preparation, like resume writing, is no longer enough. Instead, students must focus on "new career readiness," which emphasizes self-knowledge, adaptability, and self-efficacy.

- "The demand for AI skills is no longer limited to technical occupations such as machine learning engineers or software developers."
- "Our students also will see AI's growing influence in the job postings they encounter in their career searches. They will find that more employers are seeking candidates who are proficient in AI-related skills—and who can apply these skills in fields other than technology."

5. Bruno, Justin, "The AI Horizon: Case Studies in Michigan Education's Transformation (Part 2)," Michigan Virtual, June 13, 2025. Accessed Sept. 10, 2025. Available: https://michiganvirtual.org/blog/the-ai-horizon-case-studies-in-michigan-educations-transformation-part-2/

This blog post describes how several Michigan school districts are working to bring artificial intelligence into classrooms. One district is building teacher leadership through an "Innovative Workgroup" that trains staff in AI and computational thinking; another is focusing on county-wide collaboration, local AI policies, and professional training. Other districts are leading regional discussions through an "AI Leaders Task Force" and planning county-wide learning opportunities, as well as exploring how AI can support mastery-based learning with the help of an advisory group.

- Hartland School District "has also developed its own specific policies and guidelines for AI use within the local school district. This proactive step is crucial for establishing a clear framework for responsible and effective AI integration, addressing ethical considerations, and ensuring alignment with the district's values and educational goals."

- “Whether through district-led task forces, cross-county learning communities, or teacher-driven workgroups, Michigan schools are approaching AI with care, vision, and urgency.”

Project Audience

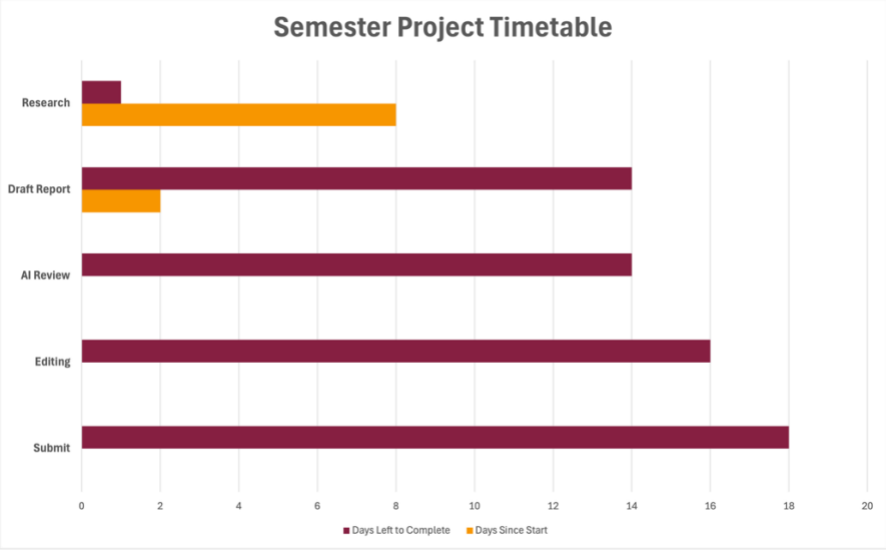
The intended audience is members of the Dickenson County School Board. These readers are not AI experts, so they need clear background information to guide policy and curriculum discussions. They already know that AI is widely used but may not be familiar with the terminology or frameworks that describe AI literacy. They will benefit from straightforward definitions, examples of AI literacy programs, data about the connection between AI literacy and job readiness, and summaries of any existing case studies.

Project Personnel

I am prepared to research and write this report based on my background in computer science. I completed a semester-long co-op at Hutchins Tech Solutions, where I worked on an AI policies manual. I have also taken a course in AI ethics and prompting and participated in three AI workshops through the Virginia Tech CS Department. These experiences have given me both technical understanding and practice in communicating AI concepts in clear, professional language. Finally, I was born in Dickenson County and understand the challenges its students face.

Project Timetable

The following Gantt chart shows my deadlines for major project stages.



Request for Approval

I request approval to pursue this project. The informational report will provide non-expert decision-makers with a clear overview of AI literacy, drawing from established definitions and examples. It will not argue for or against a specific course of action but will instead provide readers with the information needed to understand the topic and evaluate it in their own contexts.

Please let me know if this subject is suitable. You can reach me at Isabel.dotson@vt.edu.

References

[1] “Why AI Literacy is Now a Core Competency in Education.” World Economic Forum. Accessed Sept. 10, 2025. Available: https://www.weforum.org/stories/2025/05/why-ai-literacy-is-now-a-core-competency-in-education/

[2] “AI Literacy Essentials for Students: Preparing for The Future.” Innovative Educators. Accessed Sept. 18, 2025. Available: https://www.innovativeeducators.org/blogs/edushare-higher-ed-blog-news/ai-literacy-essentials-for-students-preparing-for-the-future-go2k-sl

[3] Muro, Mark, and Shriya Methkupally, “Mapping the AI Economy: Which Regions are Ready for the Next Technological Leap?” Brookings Institution, Washington, D.C., July 16, 2025.

[4] “Dickenson County, VA.” National Association of Counties. [Online]. Available: https://explorer.naco.org/index.html?county_info=51051

[5] “Dickenson County, Virginia,” United States Census Bureau. [Online]. Available: https://data.census.gov/profile/Dickenson_County,_...?g=050XX00US51051

[6] “Educational Attainment,” United States Census Bureau. [Online]. Available: https://data.census.gov/table/ACSST5Y2023.S1501?g=050XX00US51051