

Student Perceptions of AI Preparedness in Secondary Education

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ABSTRACT

Artificial intelligence (AI) is becoming increasingly integrated into the everyday lives of the current workforce, yet little is known about whether high school students feel prepared to join that workforce, especially one where AI plays a significant role. This study investigated students' perceptions of AI preparedness, sources of AI skill development, and attitudes toward AI education. A cross-sectional survey was distributed to 226 students at a public high school in Florida. The survey measured AI confidence, perceived future preparedness, teacher-led AI exposure, and interest in AI instruction. Five hypothesis tests were conducted using correlational analysis and statistical sample testing. Results showed that AI confidence was strongly associated with perceived future preparedness, while teacher-led AI instruction showed a negligible relationship with preparedness outcomes. Students generally expected AI to be important in their future careers but reported significantly lower levels of readiness to work with it. Most respondents reported developing AI skills through self-learning rather than formal education. Interest in school-based AI instruction depended largely on whether students viewed AI as relevant to their careers, but most students showed little to no interest. The results highlight a gap between the increasing role of AI in the workforce and the extent to which schools are preparing students to engage with it effectively.

LITERATURE REVIEW

1.1 The Rise of Artificial Intelligence in the Global Economy

Artificial Intelligence (AI) adoption has accelerated quickly over the past few years, especially in fields such as data-driven decision making and automation (Increasing Demand for Artificial Intelligence - 5 Key Factors, 2024). Scott Lincicome (2023) draws parallels to historical reactions to computer automations. He argues that workers initially underestimated how much automation would affect employment, and later labor trends support that concern. Researchers at J.P. Morgan suggest similar results with AI, noting that unemployment among college graduates has reached 5.8%, the highest in recent times, alongside slower job growth across tech industries, and prolonged recovery in the event of a

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recession (J.P. Morgan, 2025). A clear pattern was always evident, yet most people didn't recognize it until it was too late.

Global generative AI funding surged from \$495 US million in 2016 to a projected \$40.5 US billion in 2024, an increase of nearly 8100%, with the United States in the lead, largely due to OpenAI (Mora-López et al., 2025). A study by Dervis Kirikkaleli and Nurdan O. Kirikkaleli (2025) finds that increases in AI-related educational investment are associated with higher GDP, indicating that education-focused AI spending functions as an emerging economic input. However, the impact is still relatively small.

1.2 Artificial Intelligence's Impact on Workforce Structure and Employment Trends

A report by Kweilin Ellingrud and her team at McKinsey Global Institute (2023) examined how generative AI and automation will reshape the US labor market by 2030. According to their analysis, 30% of current work hours could be automated. While this could lead to greater leisure time, it also results in lower wages received by employees working on a per-hour basis. The steepest declines are projected in customer service and office support. In contrast, sectors like healthcare, construction, and transportation will see a rise in labor demand. The report projects approximately 12 million additional occupational transitions by 2030, disproportionately affecting lower-wage workers and women.

The World Economic Forum's Future of Jobs Report 2025 (Leopold, 2025) initially drew attention because CNN Business reported that 41% of companies expect to reduce their workforce by 2030 due to AI (Dmitracova, 2025). In an analysis for *Ars Technica*, Edwards (2025) highlights a balanced projection where AI displaces 92 million jobs but creates 170 million new ones, ultimately driving demand for AI literacy.

Research comparing labor markets in the United States and India by Ganuthula & Blaraman (2025) shows that economies with a larger-share of low-skill jobs are prone to automation risk and slower wage growth, while high-skill workers with greater AI preparedness benefit from stronger job growth and higher wages. However, the Stanford Digital Economy Lab (Chandar, 2025) notes that there is "an extraordinary amount of disagreement" among researchers regarding AI's expected labor market effects. Some anticipate near-term disruption similar to the projections above and others expect effects more consistent with prior waves of technological change.

1.3 Expansion of AI Skill Requirements Across Industries

A report conducted by the AI Workforce Consortium (2025) examined 50 Information and Communication Technologies (ICT) job roles across G7 countries. It revealed that there are critical skill gaps in generative AI, AI ethics, prompt engineering, and security (Cisco, 2018; AI Workforce Consortium, 2025). However, it also highlighted that AI roles are growing rapidly across the job market, led by AI/Machine Learning Engineers, with a 145% growth in demand, and a notable 234% growth in

demand for AI Risk and Governance Specialists (AI Workforce Consortium, 2025). The report concluded that AI skills are prevalent for jobs related to technology, with 78% of the job roles requiring them.

Deloitte's 2024 Smart Manufacturing and Operations study reports that companies are rapidly adopting AI and automation, with 78% of surveyed leaders directing more than one fifth of their improvement budgets toward these technologies (Deloitte, 2025). This transformation is happening while manufacturers face significant talent shortages, with almost half of the companies in the study reporting difficulty filling production and operations management roles (Deloitte, 2025). This directly leads to a rise in investments, with nearly one third of respondents already using AI (Deloitte, 2025).

1.4 Artificial Intelligence Education and Workforce Readiness

Given the rapid shifts in the global labor market, the primary research question guiding this study asks: Is our education system preparing students to meet the demands of an AI-driven economy?

A systematic review conducted by Xiao Tan and colleagues (2024) analyzed 95 empirical studies to examine the relationship between AI use in education and teacher professional development. Their findings indicate that most research has focused predominantly on the application of AI in teaching, rather than on how teachers are trained to use these technologies. Without focusing on the professional training of teachers on how to use AI, effective integration of said tools is unlikely to follow.

Another systematic review by Davy Ng and his team (2023) confirms Tan's results, reporting major gaps remaining in professional training and ethical AI understanding. Most studies found positive attitudes towards AI, but teacher readiness for AI varied considerably. Ng and his colleagues emphasize that, despite teachers' favorable perceptions, these gaps in training and preparedness consistently appear across the studies they reviewed.

Zoi Philippakos and Louis Rocconi (2025) surveyed 242 teachers in grades 3 through 12—93% of whom were from a single school district—regarding their awareness, use, and confidence with AI tools. Nearly half of the respondents (46.7%) reported that AI tools were extremely helpful in their instruction, while a little over half noted that they had received general AI training, which they also found valuable. ChatGPT emerged as the most used tool, with roughly 49.5% of teachers reporting usage. The study also found that secondary teachers generally demonstrated higher familiarity and confidence with AI than elementary teachers, highlighting differences across educational levels.

A related study by Silagan and Tumapon (2025) surveyed 100 teachers from a specific region, drawn via proportionate stratified sampling from a total population of 194. Teachers were asked to respond to questions on a 1–5 Likert scale, and the overall mean rating of 4.15 (SD = 0.69) suggested high technological competence and positive attitudes toward AI integration, alongside recognition of the value of training.

These studies are useful starting points, but both come with limitations. Both the Philippakos and Rocconi (2025) and Silagan and Tumapon (2025) studies rely on relatively small, regional samples, which may limit the generalizability of their findings. Response bias could still influence participants' answers, as teachers report higher levels of competence/confidence due to social expectations. The reliance on self-reported measures and Likert scales restricts insight into actual classroom practices or the effectiveness of AI integration. Additionally, while secondary teachers generally reported higher familiarity with AI than elementary teachers, these studies do not explore the underlying factors behind this disparity. To fully understand AI readiness in education, it is also necessary to consider students' experiences and responses to AI-supported learning environments.

Not all evidence points toward positive outcomes from increased AI use in educational settings, however. Gerlich (2025) surveyed and interviewed 666 participants across a range of ages and educational backgrounds and found a significant negative correlation between frequent AI tool usage and critical thinking ability, complicating the assumption that frequent AI use translates into greater competence or confidence.

These gaps in teacher preparedness create a positive feedback loop within education systems. When teachers lack training and confidence in AI, the curriculum remains underdeveloped. This limits meaningful student exposure to AI concepts. As a result, students graduate without the skills increasingly assumed by employers. This reinforces the disconnect between education and labor market demands.

1.5 Classroom-Level AI Readiness and Emerging Gaps

Recent workforce development research emphasizes that preparing future workers requires accurate insight into emerging skill demands. A study published in the *International Journal of Advanced Multidisciplinary Research and Studies* argues that AI and advanced analytics are reshaping labor markets, making early skill development and lifelong learning essential components of economic competitiveness (Nyangoma et al., 2025). These findings reinforce the importance of examining readiness among teachers but also among students, who will eventually enter that workforce. While existing literature provides substantial evidence about teachers' attitudes and training gaps, far less is known about how students perceive AI-supported learning environments.

METHODOLOGY

Feature	Description
Design	Cross-sectional, descriptive and correlational survey
Population	Students in grades 10–12 at a single public high school
Sample size	N = 226
Sampling method	Convenience sampling via classroom teachers
Recruitment	Teachers shared survey link; optional small incentive (candy, extra credit)
Consent & privacy	Voluntary, anonymous; no personally identifying information collected; exit at any time
Administration	Online platform; approximately 2–3 minutes; split across multiple short pages
Collection window	Fixed period, single wave

Table 1: Survey design overview

2.1 Identified Gap

This lack of student-focused research creates a crucial gap. Understanding student readiness is necessary to align classroom experiences with the AI-driven demands of the modern labor market.

This gap is further widened by the inequality between the pace of technological advancement and the speed of curriculum reform. AI technologies evolve rapidly through private-sector innovation. Educational curricula requires lengthy approval, policy alignment, and teacher training cycles.

2.2 Research Design

I used a cross-sectional survey design to investigate high school students' exposure to AI, their reliance on AI tools, and their perceived preparedness for an AI-influenced future workforce. The literature review suggests that while AI is rapidly transforming labor markets and creating new categories of employment, formal AI instruction in secondary education remains inconsistent. This study is descriptive and correlational in nature. The goal of this study is to identify gaps between students' current AI-related behaviors and the level of preparation provided by schools.

2.3 Participants

The sample included students across grades 10 through 12. The range of academic performance amongst the sample was measured using unweighted GPA, as it is measured somewhat similarly across schools. Participants were recruited from a single public high school using a convenience sampling method. Surveys were distributed through classroom teachers who agreed to share the survey link with their students. Teachers were asked to provide a brief description of the study and, if possible, offer small participation incentives such as candy or extra credit to encourage completion.

Participation was entirely voluntary, and no personally identifying information was collected. Responses were anonymous, and students could exit the survey at any point without penalty.

2.4 Survey Administration and Data Collection

The survey was administered using an online survey platform to ensure ease of access.

To ensure respondents did not face fatigue and to improve data reliability, the survey was designed to take no longer than 2-3 minutes to complete, and was also divided into multiple short pages rather than being presented as a single form. The survey was available for a fixed collection period. All responses were automatically recorded and stored.

All questions were written in plain language so that students would interpret each item in a similar way to reduce variability caused by unclear wording.

2.5 Survey Instrument Design and Question Development

Prior research emphasized the importance of distinguishing between AI exposure, frequency of use, reliance, expectations, and perceived preparedness. After multiple revisions, the survey questions were designed to directly measure these variables.

The survey begins with 2 demographic questions: grade level and self-reported unweighted GPA. These initial questions were placed at the start to establish respondent context (e.g., differences by grade level or academic standing). These variables serve as potential controls that may influence AI usage patterns and other perceptions.

After the demographic section, the survey moves from general perceptions of AI to more specific behaviors. Early questions focused on students' familiarity with AI tools and their overall opinions of AI's role in education and society. Familiarity was implemented using scaled response options (e.g., "have heard of but never used" versus "use regularly") rather than vague terms in order to reduce measurement error.

The original survey plan relied heavily on binary (yes/no) responses to maximize speed and simplicity. However, during the design process, I opted for a 5-point Likert scale (e.g., "strongly disagree" to "strongly agree" or "never" to "very frequently") rather than a simple yes or no format to capture the variability in student responses and allow for more detailed analysis.

Later questions focused on students' personal use of AI for academic tasks, perceived reliance on AI tools, and exposure to AI through classroom instruction or teacher use. The final sections shift toward future-oriented considerations, including intended career fields, expectations of AI integration in those careers, and adequacy of current schooling in preparing students to work with AI. Career interest

questions use predefined categories with an open-ended “other” option to balance standardization with flexibility.

Variable name	Survey question / item	Response scale
Grade	What grade are you currently in?	10th / 11th / 12th
GPA	What is your current unweighted GPA?	6 ranges, Less than 1.0 to 3.6-4.0, plus Unsure
Tech Comfort	How would you describe your overall comfort with technology (computers, apps, software)?	4-point: Very uncomfortable to Very comfortable
AI Experience	Which best describes your experience with AI tools (e.g., ChatGPT, Grammarly, image generators)?	5-point: Never heard of them to Use them regularly
AI Confidence	How confident do you feel using AI tools effectively?	4-point: Not confident at all to Very confident
AI Sentiment	Overall, how do you feel about AI as a piece of technology?	4-point: Very negative to Very positive
AI Impact	How large of an impact do you think AI will have on society over the next 10-15 years?	5-point: No impact to Extremely large impact
AI Study / AI Write / AI Coding / AI Creative	How often do you rely on AI for: (a) studying/explaining concepts; (b) writing/editing; (c) coding; (d) creative use (art, music)?	5-point: Never to Always (asked as 4 separate items)
AI Dependency	If you use AI for schoolwork, how dependent do you feel on it?	5-point: I don't use AI / Not dependent at all to Very dependent
AI Removal	If AI tools were suddenly unavailable, how would your schoolwork feel?	5-point: Much easier to Much harder
Learn vs. Speed	Do you feel AI helps you learn better, or just complete work faster?	4 categories (helps understand / helps finish faster / both equally / does not help much)
Teacher AI	How often do your teachers use AI tools in class or for instruction?	5-point: Never to Always
Teacher Explain	To your knowledge, have any teachers explained how AI tools work or discussed their benefits or risks?	4 categories: No / Not sure / Yes, briefly / Yes, in some detail
School Ethics	How prepared do you feel your school is in teaching students how to ethically use AI?	4-point: Not prepared at all to Very prepared
Career Field	What general field are you most interested in pursuing after high school?	9 predefined categories plus open-ended "Other"

Career AI Likely	How likely do you think AI will be used in your future career?	4-point: Very unlikely to Very likely
Career AI Important	How important do you think being skilled at working with AI will be for career success?	4-point: Not important to Very important
Future Prep	Right now, how prepared do you feel to work effectively with AI in the future?	4-point: Not prepared at all to Very prepared
Skill Source	Where do you think most of your AI skills currently come from?	5 categories (School / Self-learning / Online resources / Friends-social media / None yet) plus open-ended
Should Teach	Do you think schools should teach students how to use AI?	3 categories: Yes / Maybe / No
Interest in Course	If AI instruction were offered, how interested would you be in taking it?	4-point: Not interested to Very interested
Free response (2 items)	What is one concern you have about AI and your future? / What is one skill related to AI you wish school helped you develop?	Open-ended text

Table 2: Survey instrument summarized based on variable names, question wording, and response scales. Full screenshots of the survey instrument as administered are provided in Appendix A.

RESULTS

3.1 Descriptive Statistics

The five hypotheses tested in this study address related but distinct questions: whether AI self-efficacy predicts perceived future preparedness (H1), whether students who see AI as career-relevant show greater interest in formal instruction (H2), whether students expect AI to appear in their careers at a higher rate than they feel prepared to handle (H3), whether teacher-led AI instruction predicts student preparedness (H4), and whether students pursuing AI-adjacent career fields use AI for studying more frequently than those in non-technical fields (H5). These questions build on how students in this sample currently relate to AI.

Hypothesis	Groups Compared	Group Means	Test Statistic	r	Result
H1: AI Confidence → Future Preparedness	Low-high-confidence (n = 81 vs. n = 145)	1.91 vs. 2.70	t = 7.99, p < .001	.537	Supported
H2: Career Importance → Course Interest	Low-high-importance (n = 108 vs. n = 118)	1.56 vs. 2.26	t = 5.76, p < .001	.480	Supported
H3: Expected AI Role vs. Felt Preparedness	Paired comparison (N = 226)	2.73 vs. 2.42 (gap = 0.31)	paired t = 4.09, p < .001	N/A	Supported
H4: Teacher AI Use → Future Preparedness	Low-high-teacher-use (n = 103 vs. n = 123)	2.38 vs. 2.46	t = 0.70, p = .485	.015	Not supported (as predicted)
H5: Career Field → AI Study Frequency	Non-tech AI-adjacent (n = 110 vs. n = 68)	2.83 vs. 3.15	t = 1.97, p = .050	N/A	Supported (borderline)

Table 3: Summary of hypothesis testing and results

The sample was broadly familiar with AI tools. A total of 107 respondents (47.3%) reported having used AI tools multiple times, and 63 (27.9%) reported using them regularly, resulting in an overall mean of 3.93 out of 5 and a mode of 4. Only 20 respondents (8.8%) reported having never used AI tools or having only heard of them without using them. This distribution indicates that most students in the sample had some practical experience with AI prior to completing the survey.

Confidence in AI tools was considerably lower, despite the widespread experience. The mean confidence score was 2.81 out of 4, with a mode of 3 ("Moderately confident"). Sixteen respondents (7.1%) reported feeling not confident at all, and 65 (28.8%) reported only slight confidence, meaning that more than a third of the sample reported low confidence despite regular AI use.

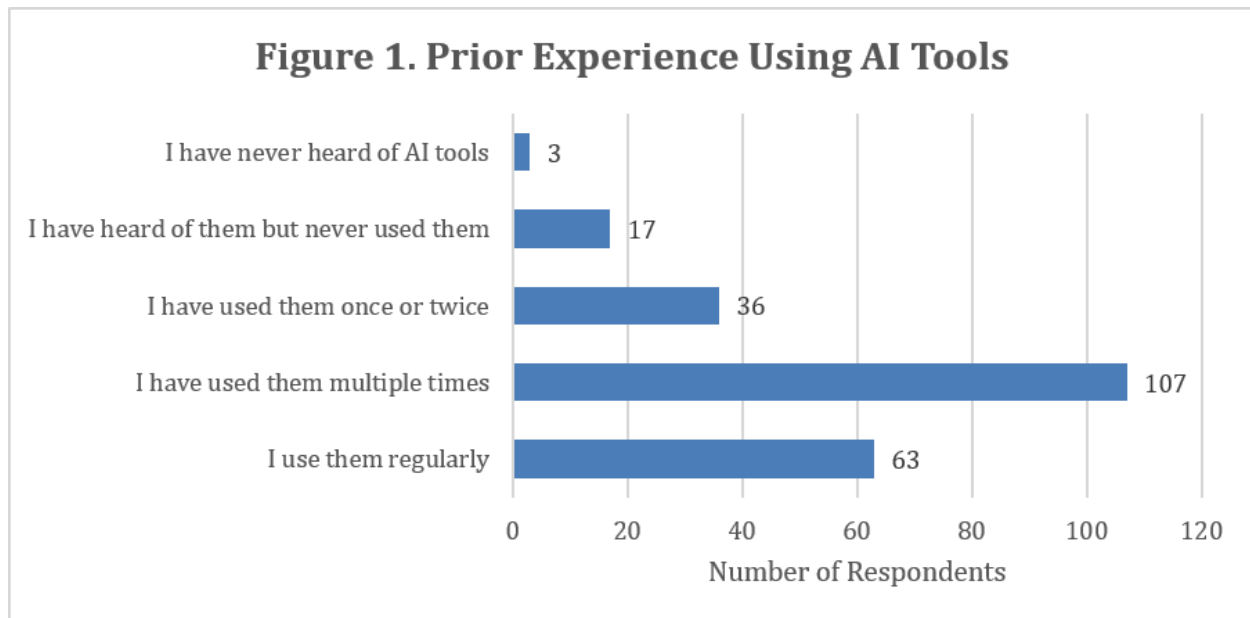


Figure 1: Prior experience using AI tools among respondents (N=226)

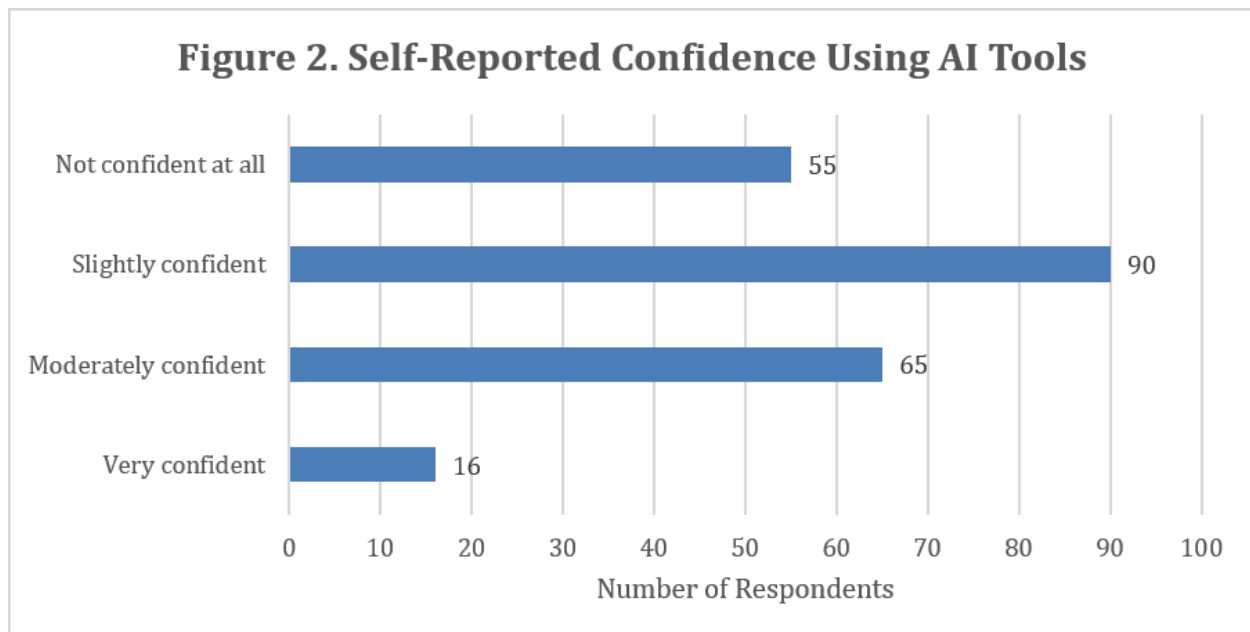


Figure 2: Self-reported confidence using AI tools effectively (N=226)

AI use for studying or explaining concepts was the most common application, with a mean of 2.93 out of 5 and a mode of 3 ("Sometimes"). Use for writing or editing was moderate (mean = 2.33, mode = 2 = "Rarely"), while use for coding (mean = 1.65, mode = 1 = "Never") and creative purposes such as art or

music (mean = 1.82, mode = 1) remained low, with "Never" representing the most common response for both.

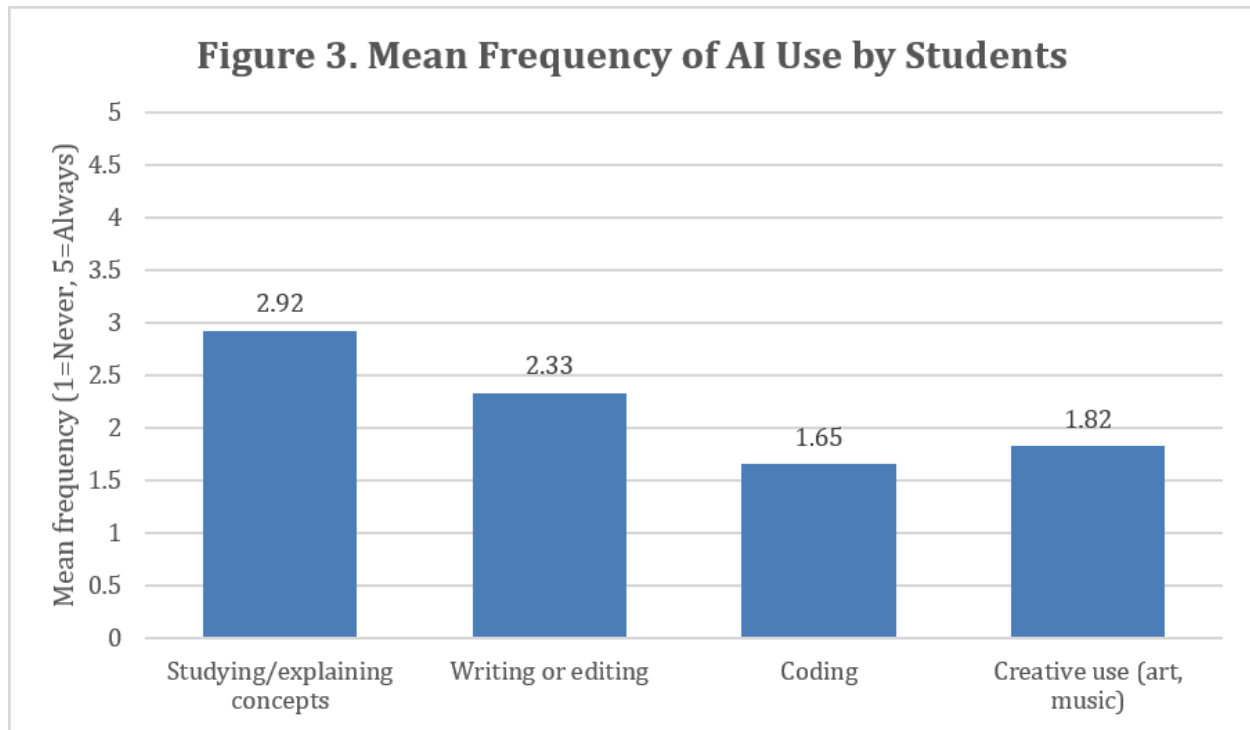


Figure 3: Mean frequency of AI use across four academic domains on a 1 (Never) to 5 (Always) Likert scale

When asked how dependent they felt on AI for academic tasks, 70 respondents (31.0%) reported not being dependent at all, and 64 (28.3%) reported only slight dependence. When asked how their schoolwork would feel if AI tools were suddenly unavailable, the most common response was "about the same" ($n = 115$, 50.9%), and a combined 42.5% indicated it would feel slightly or much easier. Only 15 respondents (6.6%) indicated that their work would feel harder without AI. This pattern suggests that while students use AI with reasonable frequency, it has not become a deeply integrated part of most students' academic routines.

The most common response on whether students felt AI helped them learn better or simply complete work faster was that AI helps with both equally ($n = 82$, 36.3%). 58 respondents (25.7%) felt it primarily helped them finish work faster, and 50 (22.1%) felt it helped them understand material better. 36 respondents (15.9%) reported that AI does not help much at all. A portion of the respondents perceive AI as genuinely useful for learning. However, the fact that over a quarter selected "helps finish faster" as their primary characterization is consistent with broader concerns raised in the literature.

Of 226 respondents, 128 (56.6%) identified self-learning as their primary source, while only 21 (9.3%) credited school. An additional 46 (20.4%) cited online resources, and 27 (11.9%) cited friends or social

media. Only 4 respondents (1.8%) reported having no AI skills at all. Taken together, these figures indicate that over 90% of students who reported having AI skills developed them entirely outside of formal educational settings.

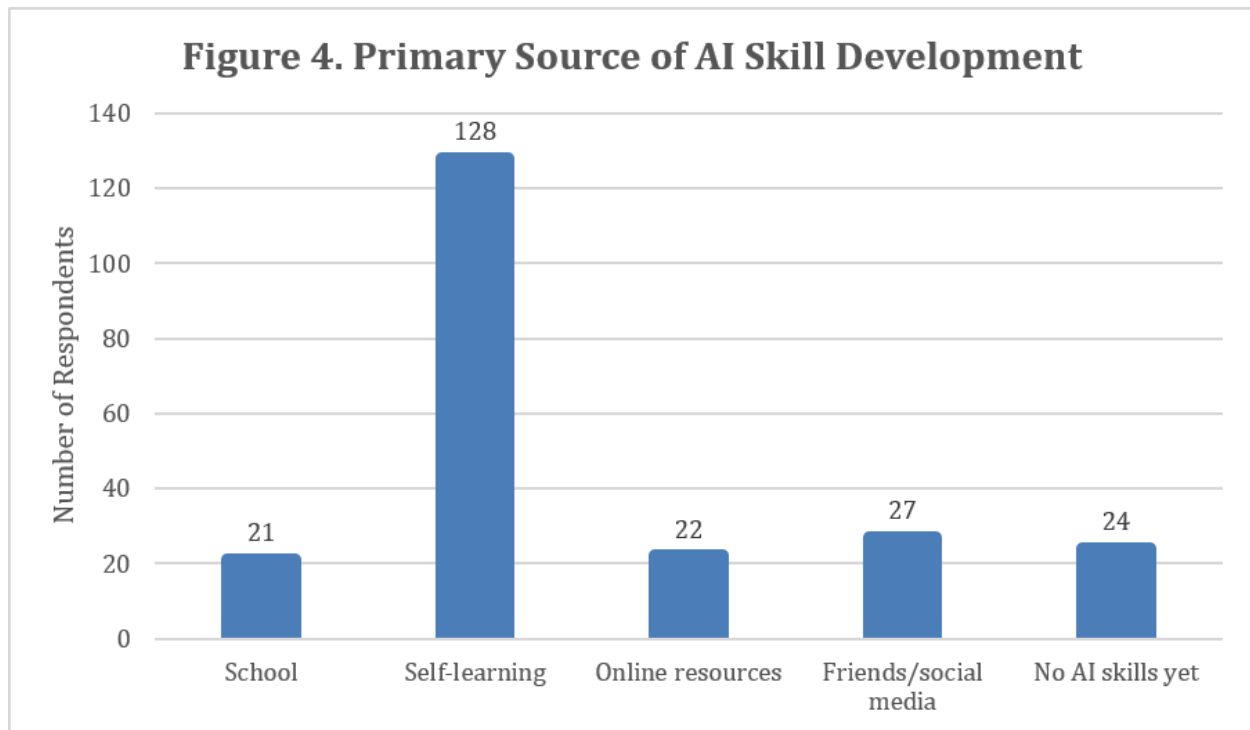


Figure 4: Primary source of AI skill development reported by respondents (N=226)

This finding is reinforced by students' assessments of their schools' readiness to teach ethical AI use, as a total of 80 respondents (35.4%) reported that their school was not prepared at all in this area, and 99 (43.8%) indicated only slight preparedness. Only 5 respondents (2.2%) rated their school as very prepared, and the mean ethical AI preparedness score was 1.88 out of 4, with a mode of 2 ("Slightly prepared"). When asked whether teachers had explained how AI tools work or discussed their benefits and risks, 55 respondents (24.3%) reported that their teachers had not done so at all, and 89 (39.4%) indicated it had been addressed only briefly. Only 61 (27.0%) reported that their teachers had explained AI in some detail.

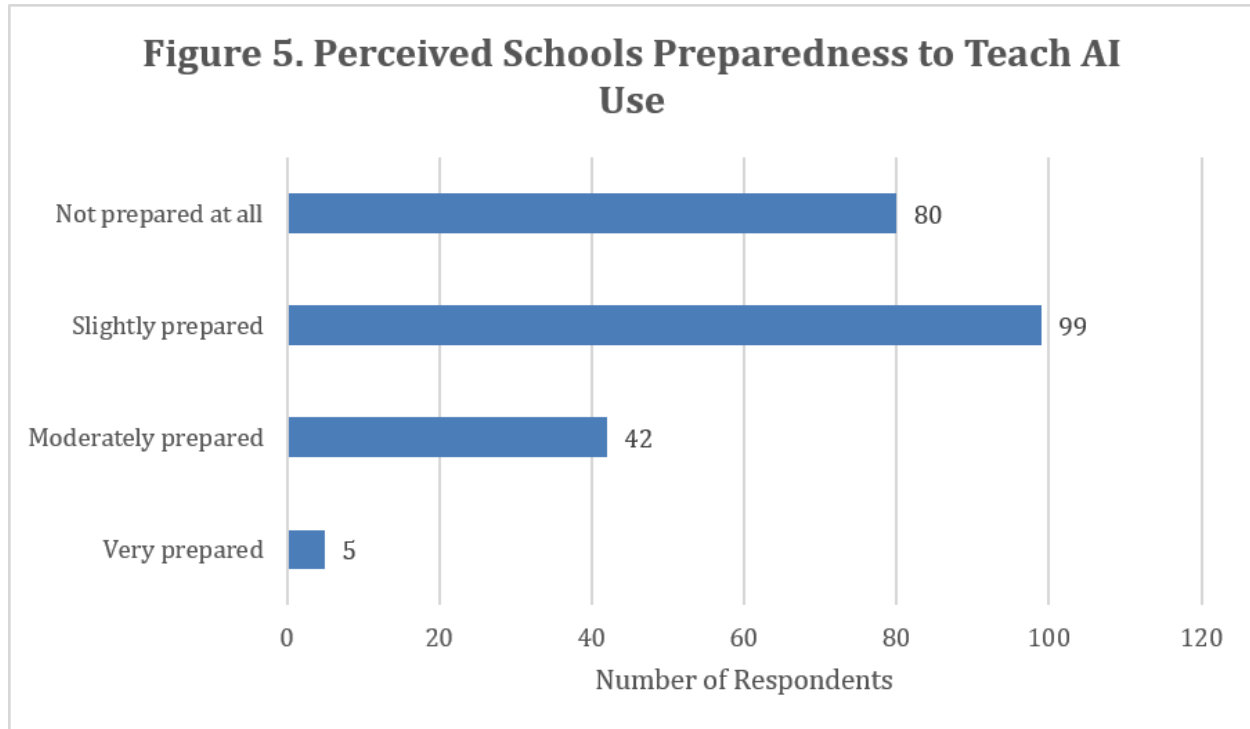


Figure 5: Perceived preparedness of schools to teach ethical AI use (N=226)

Despite this, students expressed mixed views on whether schools should teach AI. Of 226 respondents, 85 (37.6%) answered yes, 85 (37.6%) answered maybe, and 56 (24.8%) said no. When asked about their personal interest in taking an AI course if one were offered, responses were considerably more reserved: 98 respondents (43.4%) reported no interest at all, and 65 (28.8%) reported only slight interest. Only 19 (8.4%) expressed strong interest, and the mean interest score was 1.93 out of 4, with a mode of 1 ("Not interested").

The mean perceived societal impact of AI over the next 10 to 15 years was 4.43 out of 5, with a mode of 5 ("Extremely large impact"), a response selected by 123 of 226 respondents (54.4%). The mean Career AI Likelihood score was 2.74 out of 4, with 100 respondents (44.2%) selecting "Likely" and 46 (20.4%) selecting "Very likely." Career AI Importance followed a similar pattern, with a mean of 2.50 out of 4. The mean Future Preparedness score of 2.42 out of 4 is significant.

The career field distribution of the sample is relevant for interpreting the preparedness findings. Medicine/Healthcare was the most selected field by a substantial margin ($n = 76$, 33.6%), followed by Engineering ($n = 28$, 12.4%), Business/Finance ($n = 27$, 11.9%), Law/Government ($n = 21$, 9.3%), and Science/Research ($n = 20$, 8.8%). Only 13 respondents (5.8%) indicated interest in Technology/Computer Science. This means the sample is heavily weighted toward fields that have not traditionally centered AI as a professional skill, yet in which AI adoption is accelerating rapidly.

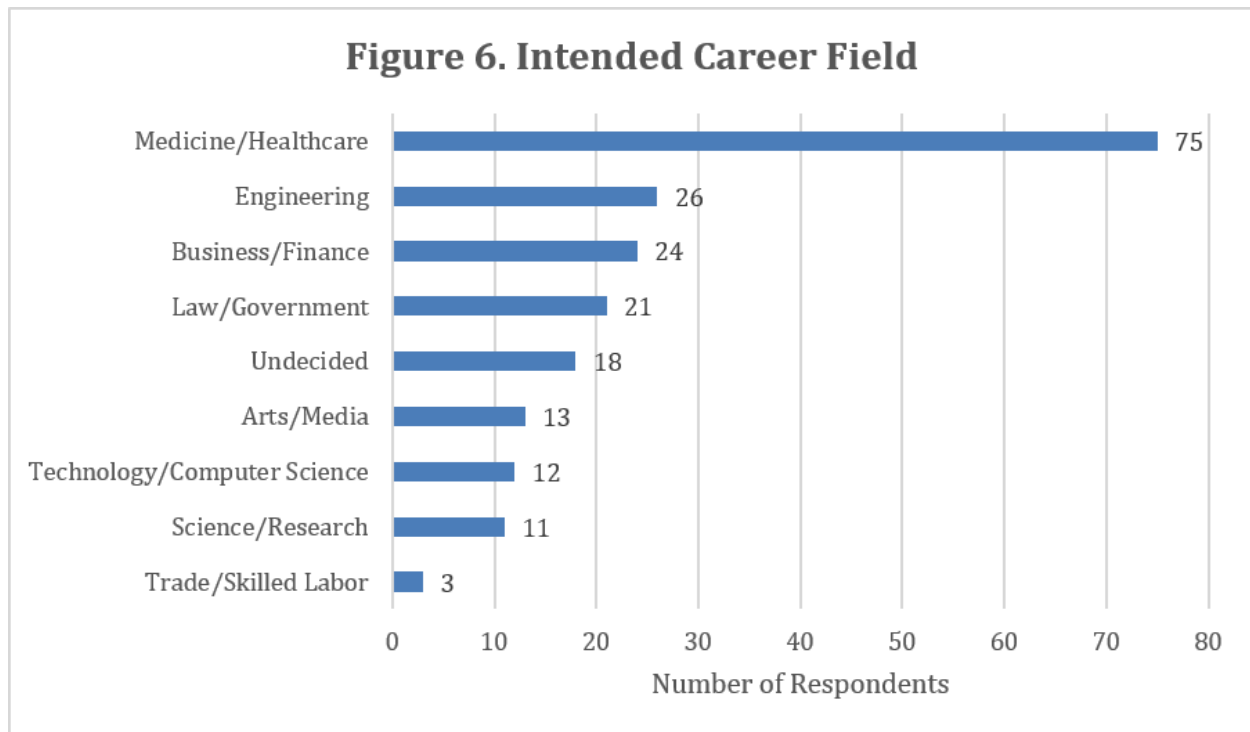


Figure 6: Distribution of intended career fields among respondents (N=226)

3.2 Hypothesis Testing

Hypothesis 1: AI Self-Efficacy and Perceived Future Preparedness

Hypothesis 1 predicted that students with higher AI self-efficacy would report greater perceived preparedness to work with AI in the future. Splitting the sample at the median confidence score (median = 3) revealed a distinct divide in perceived preparedness. The high-confidence group ($n = 145$) reported a mean Future Preparedness score of 2.70 out of 4, compared to a mean of 1.91 for the low-confidence group ($n = 81$). A two-sample t-test confirmed that this difference was statistically significant ($t = 7.99$, $p < 0.001$). The correlation between AI Confidence and Future Preparedness was $r = 0.537$, representing the strongest relationship identified across the dataset. These results support Hypothesis 1.

This finding suggests that students who develop a sense of confidence with AI tools also develop a stronger sense of readiness for a professional environment in which AI plays a growing role. However, the modal confidence response in the sample was only "Moderately confident," and over a third of respondents reported confidence at the lowest two levels of the scale. Given that confidence in this sample is primarily based on self-learning rather than formal instruction, students who feel least prepared are also those least likely to have encountered opportunities to build that confidence.

Hypothesis 2: Perceived Career Relevance and Interest in AI Instruction

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Hypothesis 2 anticipated that students who viewed AI skills as more important for their future careers would be more interested in a school-based AI course. Respondents were divided at the median of the Career AI Importance variable (median = 3). The high-importance group (n = 118) reported a mean course interest score of 2.26 out of 4, compared to 1.56 for the low-importance group (n = 108). A two-sample t-test confirmed that this difference was statistically significant ($t = 5.76$, $p < 0.001$). The correlation between Career AI Importance and Interest in Course was $r = 0.480$. These results support Hypothesis 2.

Interest in a hypothetical AI course was low across the full sample overall (mean = 1.93, mode = 1 = "Not interested"), with 43.4% of respondents expressing no interest whatsoever. The data suggests that student openness to formal AI instruction depends significantly on whether they perceive a direct connection to their career path. Students who do not see that connection remain uninterested in AI education, even if they may broadly support the idea of schools offering it.

Hypothesis 3: The AI Preparedness Gap

Hypothesis 3 predicted that students would report expecting AI to feature more prominently in their future careers than they currently feel equipped to handle. Since Career AI Likelihood and Future Preparedness are measured on the same 1 to 4 scale, a paired t-test was used to compare the two scores directly. The mean Career AI Likelihood score was 2.73, and the mean Future Preparedness score was 2.42, yielding a gap of approximately 0.31 points. This difference was statistically significant ($t = 4.09$, $p < 0.001$), supporting Hypothesis 3. This means that students feel left behind relative to their own expectations.

Hypothesis 4: Teacher-Led AI Instruction and Student Preparedness

Hypothesis 4 predicted that exposure to teacher-led AI instruction would not significantly predict students' perceived future preparedness. Respondents were divided at the median of the Teacher AI Use variable (median = 3). The high-teacher-AI group (n = 123) reported a mean Future Preparedness score of 2.46, compared to 2.38 for the low group (n = 103). A two-sample t-test returned a non-significant result ($t = 0.70$, $p = 0.485$), supporting Hypothesis 4.

The correlation between Teacher AI Use and Future Preparedness was $r = 0.015$, and between Teacher Explanation of AI and Future Preparedness was $r = 0.034$, both negligible in size. In direct contrast, the correlation between AI Confidence and Future Preparedness was $r = 0.537$, a value more than thirty times larger than either teacher-related association.

Hypothesis 5: Career Field Orientation and AI Study Frequency

Hypothesis 5 predicted that students pursuing AI-adjacent career fields would use AI for studying more frequently than students in non-technical fields. Respondents were assigned to one of two groups based on their intended career field. Group 1 (n = 68) comprised students interested in Technology/Computer Science, Engineering, or Business/Finance, representing fields identified in the literature as high AI-adoption areas. Group 2 (n = 110) comprised students interested in Medicine/Healthcare,

Law/Government, or Arts/Media. Respondents indicating other fields were excluded to keep the two groups comparable.

Group 1 reported a mean AI study frequency of 3.15 out of 5, compared to 2.83 for Group 2. A two-sample t-test returned $t = 1.97$, $p = 0.050$, $df = 148.72$. This result meets the threshold for statistical significance but should be interpreted with some caution. The pattern supports Hypothesis 5, as students oriented toward AI-adjacent careers do report using AI for studying somewhat more frequently.

DISCUSSION

4.1 Interpretation of Findings

The findings of this study provide a clear answer to the research question: students are not being adequately prepared by their schools to meet the demands of an AI-driven economy. The data shows this consistently, across nearly every variable measured.

The most striking finding here is that teacher-led AI instruction appears to have no meaningful relationship with how prepared they feel. Students who had teachers that frequently used or explained AI tools reported virtually the same preparedness scores as students whose teachers did not. What actually predicted preparedness was AI confidence, which correlated at $r = 0.537$. Students who felt competent using AI tools felt significantly more ready for a future that includes them. Over 90% of those students built that confidence on their own, through self-learning, online resources, or peers. School contributed almost nothing to that process.

This implication for schools and policymakers is direct. Occasional teacher use of AI in the classroom, or a brief explanation of what AI is and how it works, has no measurable impact on student preparedness. What appears to matter is whether students get the chance to actually build confidence through practice. Passive classroom exposure to AI cannot produce that. It requires structured, skill-building instruction, which is largely absent from what students here reported experiencing.

Students broadly expected AI to feature in their careers. The gap between Career AI Likelihood and Future Preparedness was statistically significant across the full sample, and it persisted even among Technology and Computer Science students. Even the students most oriented toward AI-heavy careers felt a meaningful shortfall relative to their own expectations.

Medicine and Healthcare was by far the most common intended field, representing over a third of respondents. This group reported a preparedness gap of 0.34 points despite being the largest career category in the sample. Students entering fields where AI adoption is accelerating are largely doing so without any structured preparation for it.

4.2 Limitations

This study has several limitations worth acknowledging. The sample was drawn from a single public high school in one county using convenience sampling, which means the findings cannot be generalized to high school students more broadly. A school in a different region, district type, or socioeconomic context could yield meaningfully different results.

9th graders were not included in the sample. Students aged 14 or under would have required parental consent to participate and requiring that in a school setting would have introduced its own response bias, since only students whose parents responded would be included.

The study relies entirely on self-reported data. Students were asked how prepared they feel, how confident they are, and how often they use AI, none of which were verified through observed behavior or performance. Social desirability and recall bias are both possible, though the anonymous and short format of the survey was designed to reduce them.

Hypothesis 5 was only supported at the conventional 95% confidence threshold, with a p-value of exactly 0.050. The borderline result means it should be interpreted with caution and would benefit from replication with a larger sample.

The use of participation incentives such as candy or extra credit raises the possibility of duplicate responses, since there was no mechanism to prevent a student from submitting the survey more than once across different classrooms.

4.3 Future Research

Expanding the sample to multiple schools across different districts, regions, and demographic profiles would allow researchers to test whether the patterns found here hold more broadly. Including 9th graders with appropriate consent procedures would give a more complete picture of how AI preparedness develops across all four years of high school.

The free-response questions in this survey also revealed two points that this study was not designed to measure but that clearly warrant further attention. Job displacement was the main concern for students, which aligns with the literature reviewed here. What was less expected was how frequently environmental impact appeared as a concern. Water usage, energy consumption, and ecological harm came up multiple times. These variables were not included in the survey because the research focus was on preparedness, and the environmental effects of AI was not featured in the literature at the time the survey was designed. Future research could explore whether students' environmental concerns about AI influence their willingness to engage with it academically or professionally.

The second point was AI detection anxiety. Multiple students expressed concern not about using AI, but about being falsely accused of using it. This is a different relationship with AI than preparedness research typically captures. Research into how AI detection policies in schools and universities affect student behavior and wellbeing would fill a gap that this study could not address.

4.4 Conclusion

Approximately 90% of the student sample is having to develop fundamental skills about AI through self-learning, with no guidance, nor anyone to ensure that the correct precautions are in place, or whether what is being taught is correct. Teacher-led AI exposure correlated at $r=0.015$, while AI confidence correlated at $r=0.537$, making it clear that what schools are currently providing is not enough. All educational institutions must move beyond simply acknowledging the existence of AI and begin providing students with meaningful opportunities to develop the confidence to use it effectively. The future students expect is already taking shape; it is now up to schools to ensure they are prepared for it.

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APPENDIX

Appendix A

Artificial Intelligence in High School Education

THIS SURVEY IS ENTIRELY ANONYMOUS.
This survey examines how high school students use artificial intelligence (AI), their experiences with AI in school, and their expectations for AI in future careers. The survey takes approximately 2–3 minutes to complete. Participation is voluntary, and no identifying information is collected. Responses will be used solely for academic research purposes.

* Indicates required question

What grade are you currently in? *

☐ 9th

☐ 10th

☐ 11th

☐ 12th

What is your current unweighted GPA? *

☐ Less than 1.0

☐ Between 1.0 and 1.5

☐ Between 1.6 and 2.0

☐ Between 2.1 and 2.5

☐ Between 2.6 and 3.0

☐ Between 3.1 and 3.5

☐ Between 3.6 and 4.0

☐ Unsure

Comfort with AI and Related Technologies

How would you describe your overall comfort with technology (computers, apps, software)? *

- ☐ Very uncomfortable
- ☐ Somewhat uncomfortable
- ☐ Somewhat comfortable
- ☐ Very comfortable

Which best describes your experience with AI tools (e.g., ChatGPT, Grammarly, image generators)? *

- ☐ I have never heard of AI tools
- ☐ I have heard of them but never used them
- ☐ I have used them once or twice
- ☐ I have used them multiple times
- ☐ I use them regularly

How confident do you feel using AI tools effectively? *

- ☐ Not confident at all
- ☐ Slightly confident
- ☐ Moderately confident
- ☐ Very confident

Overall, how do you feel about AI as a piece of technology? *

- ☐ Very negative
- ☐ Somewhat negative
- ☐ Somewhat positive
- ☐ Very positive

How large of an impact do you think AI will have on society over the next 10-15 years? *

- ☐ No impact
- ☐ Small impact
- ☐ Moderate impact
- ☐ Large impact
- ☐ Extremely large impact

Applications of AI by Students

How often do you rely on AI for studying or explaining concepts? *

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Always

How often do you rely on AI for writing or editing? *

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Always

How often do you rely on AI for coding? *

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Always

How often do you rely on AI for creative use cases (art, music, etc.)? *

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often
- ☐ Always

AI in Academic Work

If you use AI for schoolwork, how dependent do you feel on it? *

- ☐ Not dependent at all
- ☐ Slightly dependent
- ☐ Moderately dependent
- ☐ Very dependent
- ☐ I don't use AI

If AI tools were suddenly unavailable, how would your schoolwork feel? *

- ☐ Much harder
- ☐ Slightly harder
- ☐ About the same
- ☐ Slightly easier
- ☐ Much easier

Do you feel AI helps you learn better, or just complete work faster? *

- ☐ It helps me understand material better
- ☐ It helps me finish work faster
- ☐ It helps with both equally
- ☐ It does not help much

Educator Use of AI

How often do your teachers use AI tools in class or for instruction? *

☐ Never

☐ Rarely

☐ Sometimes

☐ Often

☐ Always

To your knowledge, have any teachers explained how AI tools work or discussed their benefits or risks? *

☐ No

☐ Yes, briefly

☐ Yes, in some detail

☐ Not sure

How prepared do you feel your school is in teaching students how to ethically use AI? *

☐ Not prepared at all

☐ Slightly prepared

☐ Moderately prepared

☐ Very prepared

AI in Students' Future Careers

What general field are you most interested in pursuing after high school? *

- ☐ Technology/Computer Science
- ☐ Engineering
- ☐ Medicine/Healthcare
- ☐ Business/Finance
- ☐ Law/Government
- ☐ Arts/Media
- ☐ Science/Research
- ☐ Trades/Skilled Labor
- ☐ Education
- ☐ Undecided
- ☐ Other: _____

How likely do you think AI will be used in your future career? *

- ☐ Very unlikely
- ☐ Unlikely
- ☐ Likely
- ☐ Very likely

How important do you think being skilled at working *with* AI will be for career success? *

☐ Not important

☐ Slightly important

☐ Moderately important

☐ Very important

Right now, how prepared do you feel to work effectively with AI in the future? *

☐ Not prepared at all

☐ Slightly prepared

☐ Moderately prepared

☐ Very prepared

General AI Questions

Where do you think most of your AI skills currently come from? *

- ☐ School
- ☐ Self-learning
- ☐ Friends/Social Media
- ☐ Online resources
- ☐ I don't have AI skills yet
- ☐ Other: _____

Do you think schools should teach students how to use AI? *

- ☐ No
- ☐ Yes
- ☐ Maybe

If AI instruction were offered, how interested would you be in taking it? *

- ☐ Not interested
- ☐ Slightly interested
- ☐ Moderately interested
- ☐ Very interested

What is one concern you have about AI and your future? *

Your answer _____

What is one skill related to AI you wish school helped or should help you developed? *

Your answer _____

Appendix B

	Grade	GPA	Tech Comfort	AI Experience	AI Confidence	AI Sentiment	AI Impact	AI Study	AI Write	AI Coding	AI Creative	Career Field	AI Reviews	Learn vs Speed	Teacher AI	Teacher Explain	School Ethics	Skill Source	Career AI Likely	Career AI Important	Future Prep	AI Dependency	Should Teach	Interest in Course
Grade	1																							
GPA	0.1418806	1																						
Tech Comfort	-0.00289969	-0.3522542	1																					
AI Experience	0.30154936	0.0914546	0.04800162	1																				
AI Confidence	0.0551837	0.11232196	0.02193412	0.06088769	1																			
AI Sentiment	0.02748968	0.07324432	0.02100366	0.06689993	0.48282558	1																		
AI Impact	0.01979889	0.02741965	-0.01799291	0.06186779	0.18885771	0.65081897	1																	
AI Study	0.04825438	0.12221989	-0.02079663	0.01936219	0.49743122	0.10798864	0.17819837	1																
AI Write	0.11210809	0.11210196	-0.01142006	0.01427362	0.34196745	0.15178785	0.05709555	0.01993895	1															
AI Coding	0.05197984	0.06297808	0.02697891	0.02454848	0.28778229	0.29488284	0.08373125	0.03082824	0.37746588	1														
AI Creative	0.01976533	0.04161811	0.02748377	0.06384096	0.31888185	0.44888367	0.08376541	0.18683634	0.18781847	0.47319396	1													
Career Field	0.03052111	-0.07351349	0.02209868	0.02106896	0.13897929	0.04992957	0.02885148	0.10191917	0.10225478	0.21272021	0.22362889	1												
AI Removal	0.01013314	-0.06114199	-0.02108422	-0.01958769	-0.21778744	-0.24025488	-0.18194215	-0.24811251	-0.24812679	-0.01420182	0.64088542	-0.10108899	1											
Learn vs Speed	0.00117626	-0.04121931	0.02412882	-0.01828190	-0.02829744	-0.18181868	-0.08822317	-0.24812679	-0.24812679	-0.38161143	-0.11188222	0.28428752	0.14181811	1										
Teacher AI	0.00258789	0.01472106	0.04106886	0.11588185	0.07886248	0.12888785	0.02888131	0.01888135	0.13184286	0.08857882	0.18888888	0.08888888	0.08888888	0.08888888	1									
Teacher Explain	0.00181874	0.08888888	-0.14888888	-0.04888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	1								
School Ethics	0.12289725	0.06372886	0.10248494	0.23878596	0.38993102	0.55893229	-0.03747321	0.24812679	0.21015823	0.25025842	0.21877873	0.09384287	-0.08888888	-0.08888888	0.08888888	0.08888888	1							
Skill Source	0.00108819	-0.04121931	0.02412882	-0.01828190	-0.02829744	-0.18181868	-0.08822317	-0.24812679	-0.24812679	-0.38161143	-0.11188222	0.28428752	0.14181811	1										
Career AI Likely	0.12584829	0.04353784	0.02169712	0.02169712	0.14288511	0.07888785	0.02888131	0.01888135	0.13184286	0.08857882	0.18888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	1						
Career AI Important	0.00181874	0.08888888	-0.14888888	-0.04888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	1					
Future Prep	0.00181874	0.08888888	-0.14888888	-0.04888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	1				
AI Dependency	0.00181874	0.08888888	-0.14888888	-0.04888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	1			
Should Teach	0.00181874	0.08888888	-0.14888888	-0.04888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	1		
Interest in Course	-0.00181874	-0.08888888	0.14888888	0.04888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888	-0.08888888

Appendix C

	Grade	GPA	Tech Comfort	AI Experience	AI Confidence	AI Sentiment	AI Impact	AI Study	AI Write	AI Coding	AI Creative	Career Field	AI Reviews	Learn vs Speed	Teacher AI	Teacher Explain	School Ethics	Skill Source	Career AI Likely	Career AI Important	Future Prep	AI Dependency	Should Teach	Interest in Course
Grade	1																							
GPA	-0.154	1																						
Tech Comfort	-0.081	-0.154	1																					
AI Experience	0.081	0.081	0.081	1																				
AI Confidence	0.081	0.081	0.081	0.081	1																			
AI Sentiment	0.081	0.081	0.081	0.081	0.081	1																		
AI Impact	0.081	0.081	0.081	0.081	0.081	0.081	1																	
AI Study	0.081	0.081	0.081	0.081	0.081	0.081	0.081	1																
AI Write	0.11	0.113	0.015	0.477	0.344	0.414	0.323	0.598	1															
AI Coding	0.057	0.053	0.037	0.295	0.288	0.295	0.304	0.383	0.377	1														
AI Creative	-0.012	0.045	0.079	0.197	0.311	0.441	-0.304	0.389	0.378	0.475	1													
Career Field	0.094	-0.011	0.022	0.121	0.125	0.098	0.128	0.198	0.16	0.223	0.221	1												
AI Removal	0.02	0.063	0.09	0.368	0.277	0.258	0.122	0.372	0.225	0.015	0.043	0.101	1											
Learn vs Speed	0.086	-0.078	0.083	-0.151	-0.375	-0.182	-0.377	-0.777	-0.174	-0.088	-0.877	0.254	0.175	1										
Teacher AI	0.09	0.075	-0.041	0.114	0.377	0.126	0.13	0.222	0.14	0.12	0.089	-0.105	-0.187	-0.132	1									
Teacher Explain	0.08	0.089	-0.041	-0.087	-0.363	-0.041	-0.347	0.087	-0.084	0.017	0.021	0.113	0.028	0.025	0.087	1								
School Ethics	0.123	0.061	0.125	0.228	0.305	0.255	-0.357	0.226	0.217	0.269	0.219	0.083	0.001	-0.351	-0.084	0.197	1							
Skill Source	0.085	0.084	0.086	0.086	0.086	0.086	0.086	0.086	0.086	0.086	0.086	0.086	0.086	0.086	0.086	0.086	0.086	1						
Career AI Likely	0.187	0.049	-0.089	0.269	0.147	0.127	0.383	0.13	0.175	0.734	-0.83	0.071	-0.203	-0.197	0.14	-0.043	0.075	-0.131	1					
Career AI Important	0.014	0.091	-0.089	0.21	0.21	0.288	0.115	0.379	0.25	0.272	0.141	0.013	-0.204	-0.196	0.196	0.041	0.13	-0.345	0.521	1				
Future Prep	0.011	0.093	0.111	0.287	0.307	0.11	0.308	0.491	0.311	0.618	0.231	0.189	-0.208	-0.395	0.176	0.031	0.232	-0.282	0.111	0.323	1			
AI Dependency	0.02	0.14	0.009	0.308	0.259	0.183	0.343	0.231	0.226	0.041	0.08	0.089	0.193	0.121	0.118	0.131	0.137	0.303	0.173	0.18	0.24	1		
Should Teach	0.078	0.048	0.035	0.111	0.375	0.207	-0.375	0.079	0.06	0.144	0.119	0.074	-0.048	0.197	0.049	0.024	0.147	0.181	0.184	0.181	0.181	-0.111	1	
Interest in Course	-0.028	0.183	0.037	0.288	0.272	0.282	0.147	0.388	0.141	0.357	0.388	0.131	-0.205	-0.18	0.195	-0.033	0.225	-0.121	0.245	0.48	0.297	-0.047	0.185	1

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