Acceptance of Artificial Intelligence Technology and Optimism Regarding Its Impact on the Job Market Among High School Students

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Since the introduction of ChatGPT, generative AI has presented notable challenges to the future job market, sparking widespread discussions about how automation and AI technologies might impact employment. However, individuals perceive these challenges differently based on their characteristics, with some viewing AI advancements as opportunities for growth and innovation. This study aimed to explore high school students' perceptions of AI's influence on the future job market. We hypothesized that proactive personality traits, technical and occupational self-efficacy would positively shape students' preparedness, optimism, and concerns about their future careers. To test these hypotheses, we gathered data from 141 high school students. Our findings revealed that proactive personality and technical self-efficacy positively correlated with a heightened sense of preparedness and optimism about AI's impact on jobs. These insights offer practical implications for educators and policymakers and suggest areas for future research to better understand how students can be prepared for an AI-driven workforce.

Keywords: Artificial Intelligence (AI), technology acceptance, career choice, high school

INTRODUCTION

Artificial Intelligence (AI) technology was introduced long ago and has been used widely in many fields. However, the emergence of generative AI (e.g., Chat GPT, Bard) opened a new era of AI since the new technology can drastically change the nature of most jobs, even those requiring creative, complicated skills.

AI is having a significant impact on the job market, transforming various industries and occupations. AI is eliminating certain jobs and creating new ones, leading to reshaping the employment landscape. According to Frey and Osborne (2017), approximately 47% of total US employment is at risk of computerization, with AI and machine learning being key drivers of this trend. They argue that jobs involving routine cognitive tasks are particularly vulnerable to automation. The impact of AI on employment is not uniform across all sectors. Arntz et al. (2017) suggest that the risk of automation is lower when considering job-specific tasks rather than entire occupations.

There are also concerns about AI exacerbating wage inequality. Acemoglu and Restrepo (2020) found that AI-driven automation tends to displace lower-skilled workers while benefiting high-skilled workers who can work with these new technologies. Despite these concerns, some researchers argue that AI

eliminates jobs and creates new opportunities. Sharma and Mishra (2023) suggest that AI has a pronounced job creation effect, revealing that the impact of automation technology on the labor market is mainly positively manifested as "icing on the cake." The effects of AI on employment are likely to be uneven across different sectors and skill levels. A recent study by Feng et al. (2024) found that while AI positively impacts employment, it brings greater digital welfare to female practitioners and workers in labor-intensive industries while reducing the overall proportion of male practitioners in the manufacturing industry. While there are legitimate concerns over AI's impact on employment, the effects are complex and multifaceted. Job displacement is a real issue but counterbalanced by job creation and transformation. The key challenge for policymakers and workers alike is to adapt to these changes and ensure that the benefits of AI are broadly shared.

Many high school students are increasingly exposed to various AI programs and utilize AI technologies in their schoolwork. As they explore potential college majors, they express significant concerns about AI's impact on the future job market. Despite this, little to no research specifically focused on high school students in this context.

Our study aims to investigate high school students' attitudes toward AI technology adoption and their perceptions of AI's influence on future careers. In particular, we examine how personal traits—such as proactive personality, technological self-efficacy, and occupational self-efficacy—affect students' acceptance of AI technology and their optimism about the future job market. This research contributes to the existing AI literature by providing insights into high school students' views on AI technologies. The following sections present a literature review, hypotheses development, research methodology, and discussion.

LITERATURE REVIEW

Prosocial Personality

Proactive personality is a concept that has gained significant attention in organizational psychology and career development research. A proactive personality is a stable disposition to take personal initiative in a broad range of activities and situations. Individuals with a proactive personality are characterized by their tendency to scan for opportunities, look for ways to utilize resources, and shape their environment. They demonstrate persistence, initiate actions to overcome difficulties, and actively fulfill their ambitions (Seibert et al., 2001). Proactive personality is characterized by the dispositional tendency to be active and goal-oriented. Individuals with a proactive personality are likelier to take proactive actions to achieve career or academic success. They tend to identify opportunities, take actions, and persevere until they reach success, often altering their environment proactively rather than being constrained by it (Crant, 1995).

It's important to note that a proactive personality is considered a relatively stable trait. This means that while environmental factors and experiences can influence it, it tends to remain consistent over time and across different situations (Doğanülkü & Korkmaz, 2023). A proactive personality has been linked to various positive outcomes in the workplace and career development. For instance, research has shown that individuals with proactive personalities are more likely to achieve career success, demonstrate better job performance, and show higher levels of career adaptability (Wang et al., 2021).

Understanding proactive personality is crucial for organizations and individuals alike. Identifying and nurturing proactive employees can lead to increased innovation and productivity for organizations. For individuals, recognizing and developing their proactive tendencies can contribute to better career outcomes and personal growth.

Proactive Personality and AI Preparation

Past studies have explored the impact of a proactive personality on new technology acceptance. Individuals with proactive personalities are more likely to engage in innovative behaviors at work, including accepting and utilizing new technologies (Li et al., 2022). These individuals tend to seek out and implement new solutions, aligning with their tendency to control their environment and improve performance through innovation. Research shows that employees with proactive personalities are more optimistic about utilizing

new technology and are better at adapting to technological changes (Abdul Hamid, 2022). This readiness to accept and integrate new technologies is linked to higher job performance and innovative outcomes.

A study by Kim et al. (2009) explores the role of proactive personality in career behavior, highlighting that proactive individuals are more likely to exhibit proactive career behaviors, including accepting new technologies as part of their career development. Hwang et al. (2016) investigate information proactiveness and its impact on adopting content management systems. Their findings suggest that individuals with proactive information-seeking behaviors are more likely to perceive new technologies as easy to use and useful, thereby increasing their likelihood of adoption.

These studies collectively indicate that proactive personality plays a crucial role in accepting and utilizing new technologies across various contexts, from workplace innovation to career development and information management.

Hypothesis 1a: *Proactive Personality is positively related to AI preparation.*

Proactive Personality and Optimism About AI Impact

Proactive personality scholars have explored the impact of proactive personality on the perception of future careers. Proactive personality has positively influenced career adaptability, which is crucial for navigating future career challenges and opportunities. Individuals with proactive personalities are likelier to take initiative in career planning and development, leading to better preparedness for future career demands (Jiang, 2017). Research indicates that proactive personality is positively associated with career growth potential. Proactive individuals tend to actively identify and create opportunities that facilitate realizing their career goals, potentially leading to more optimistic perceptions of their future careers (Li et al., 2022). A study by Zhou et al. (2023) revealed that proactive personality positively impacts subjective career success through organizational citizenship behavior (OCB). This suggests that proactive individuals may perceive their future careers more favorably due to their tendency to engage in behaviors that contribute to organizational success.

Proactive personality has also been linked to enhanced career adaptability resources, including concern, control, curiosity, and confidence. These resources are crucial for managing future career transitions and challenges, potentially leading to more positive perceptions of future career prospects (Hou et al., 2014). Furthermore, proactive individuals are more likely to engage in career exploration and planning activities, leading to clearer career goals and a more positive outlook on future career opportunities (Cai et al., 2015).

These findings collectively suggest that proactive personality significantly shapes individuals' perceptions of their future careers, primarily through increased adaptability, goal-oriented behaviors, and engagement in career development activities. Based on the discussion above, we propose the following hypothesis.

Hypothesis 1b: *Proactive Personality is positively related to an optimistic view on future AI impact*.

Technological Self-Efficacy

Technological self-efficacy (TSE) is a concept that has gained importance in recent years due to the increasing role of technology in various aspects of life, including education and work. Here are two definitions of technological self-efficacy from peer-reviewed journal sources:

McDonald and Siegall (1992) define technological self-efficacy as "the belief in one's ability to successfully perform a technologically sophisticated new task". This definition emphasizes the individual's confidence in tackling new and complex technological tasks (Huffman et al., 2013).

A more recent definition by Celik and Yesilyurt (2013) describes technological self-efficacy as an individual's belief in their capability to successfully deal with technology. This broader definition encompasses the ability to perform new tasks and the overall capacity to interact with and utilize technology effectively (Venkatesh et al., 2023).

Both definitions highlight the importance of an individual's belief in their own abilities when it comes to technology use. The first definition focuses on the performance of new and sophisticated tasks, while the

second takes a more general approach to dealing with technology. Understanding technological self-efficacy is crucial as it can influence an individual's willingness to adopt new technologies, their performance in technology-related tasks, and even their career choices in fields that require technological proficiency.

Technological Self-Efficacy and New Technology Acceptance

Scholars have explored the impact of technological self-efficacy on new technology acceptance. Technological self-efficacy significantly influences individuals' acceptance of new technologies. Higher levels of technological self-efficacy are associated with greater confidence in using new technology, which enhances technology acceptance (Saville & Foster, 2021). Individuals who believe in their technological capabilities are likelier to perceive new technologies as useful and easy to use.

A study by Compeau and Higgins (1995) demonstrated that computer self-efficacy, a component of technological self-efficacy, directly impacts users' perceptions of technology's ease of use and usefulness, which are critical determinants of technology acceptance. This relationship suggests that enhancing self-efficacy can improve technology adoption rates.

Research by Celik and Yesilyurt (2013) supports these findings, indicating that individuals with higher technological self-efficacy are more likely to accept and use new technologies. This is due to their increased confidence in handling technological challenges and their proactive approach to learning and using new systems. A recent study published in Scientific Reports assessed the effect of technological self-efficacy on ICT acceptance and implementation in China's education sector. The findings indicated that higher technological self-efficacy positively influences the acceptance and use of ICT, highlighting the importance of self-efficacy in technology adoption (Xu et al., 2024).

These studies demonstrate that technological self-efficacy plays a crucial role in accepting and utilizing new technologies, emphasizing the importance of fostering self-efficacy to enhance technology adoption. Based on the discussion above, we suggest the following hypothesis.

Hypothesis 2a: *Technological Self-efficacy is positively related to AI preparation.*

Technological Self-Efficacy and Optimism About AI Impact

Past research has explored the impact of technological self-efficacy on the perception of future careers. Technological self-efficacy has significantly influenced students' career aspirations and perceptions, particularly in technology-related fields. A study by Lent et al. (2008) revealed that higher levels of technological self-efficacy were associated with greater interest in and consideration of technology-related careers among college students.

Research indicates that technological self-efficacy is crucial in shaping career choices and expectations. McDonald and Siegall (1992) found that employees with higher technological self-efficacy reported more positive attitudes toward technological changes in their workplace and were more likely to perceive future career opportunities positively.

A study by Compeau and Higgins (1995) demonstrated that individuals with higher computer self-efficacy, a component of technological self-efficacy, were more likely to use computers and perceive them as beneficial for their future careers. This suggests that technological self-efficacy can influence how individuals view the role of technology in their future career paths. Furthermore, Betz and Hackett (2006) highlighted the importance of self-efficacy, including technological self-efficacy, in career development theory. They found that higher levels of self-efficacy in specific domains, such as technology, were associated with a broader range of perceived career options and more positive expectations for future career success.

These studies indicate that technological self-efficacy significantly shapes positive perceptions of their future careers, particularly in technology-driven fields and environments. Based on the discussion above, we propose the following hypothesis.

Hypothesis 2b: *Technological Self-efficacy is positively related to an Optimistic View on future AI impact.*

Occupational Self-Efficacy

Occupational self-efficacy is a crucial concept in understanding an individual's beliefs about their capabilities in the workplace. Rigotti et al. (2008) define occupational self-efficacy as "the belief that an individual is competent to fulfill work-related tasks or activities". This definition emphasizes the individual's confidence in their ability to perform various aspects of their job effectively. Another definition, provided by Schyns and von Collani (2002), describes occupational self-efficacy as "one's belief in one's ability and competence to perform successfully and effectively in situations and across different tasks in a job". This definition broadens the concept to include specific tasks and the ability to adapt and perform across different situations within a job role.

Both definitions highlight the importance of an individual's belief in their own capabilities within the work context. They emphasize that occupational self-efficacy is not about specific skills or abilities, but rather about the confidence one has in applying those skills effectively in the workplace. It's worth noting that occupational self-efficacy is distinct from general self-efficacy. Bandura (1977) points out that self-efficacy is context-specific, and occupational self-efficacy focuses specifically on the work domain. This specificity makes it particularly relevant for understanding and predicting work-related behaviors and outcomes.

Occupational self-efficacy has been shown to have significant implications for various work-related outcomes. For instance, research has found that it predicts job satisfaction, job performance, and even expected retirement age. Individuals with higher occupational self-efficacy tend to set more ambitious goals, persist longer when facing difficulties, and generally perform better in their roles (Paggi & Jopp, 2015).

Occupational Self-Efficacy and AI Preparation

Past studies have explored the impact of occupational self-efficacy on acceptance of new technology. Occupational self-efficacy significantly influences individuals' acceptance of new technologies. High levels of self-efficacy are associated with greater confidence in using new technology, which in turn enhances technology acceptance (Cho & Kim, 2020). This is because individuals who believe in their capabilities are more likely to perceive new technologies as useful and easy to use.

Compeau and Higgins (1995) found that computer self-efficacy, a component of occupational self-efficacy, directly impacts users' perceptions of technology's ease of use and usefulness, which are critical determinants of technology acceptance. This relationship suggests that enhancing self-efficacy can improve technology adoption rates. Another study by Celik and Yesilyurt (2013) supports these findings, indicating that individuals with higher technological self-efficacy are more likely to accept and use new technologies. This is due to their increased confidence in handling technological challenges and their proactive approach to learning and using new systems.

Research by Venkatesh and Davis (1996) also highlights the importance of self-efficacy in technology acceptance. They found that self-efficacy beliefs significantly influence perceived ease of use, which is a key predictor of technology acceptance. This suggests that interventions aimed at boosting self-efficacy could facilitate smoother technology adoption processes.

These studies collectively indicate that occupational self-efficacy plays a crucial role in accepting and utilizing new technologies, emphasizing the importance of fostering self-efficacy to enhance technology adoption. Based on the discussion above, we propose the following hypothesis.

Hypothesis 3a: *Occupational Self-efficacy is positively related to AI preparation.*

Occupational Self-Efficacy and Optimism About AI Impact

Past studies have explored the impact of occupational self-efficacy on the perception of future careers. Occupational self-efficacy significantly influences individuals' career development and perception of future career opportunities. High levels of self-efficacy are associated with greater confidence in career decision-making and exploration, positively impacting individuals' perceptions of their future careers (Silva et al., 2023). Research indicates that occupational self-efficacy is linked to career and organizational commitment,

which influence turnover intentions. This suggests that individuals with higher occupational self-efficacy are more likely to perceive their future careers positively due to their commitment to their career paths and organizations (Schyns & Felfe, 2006).

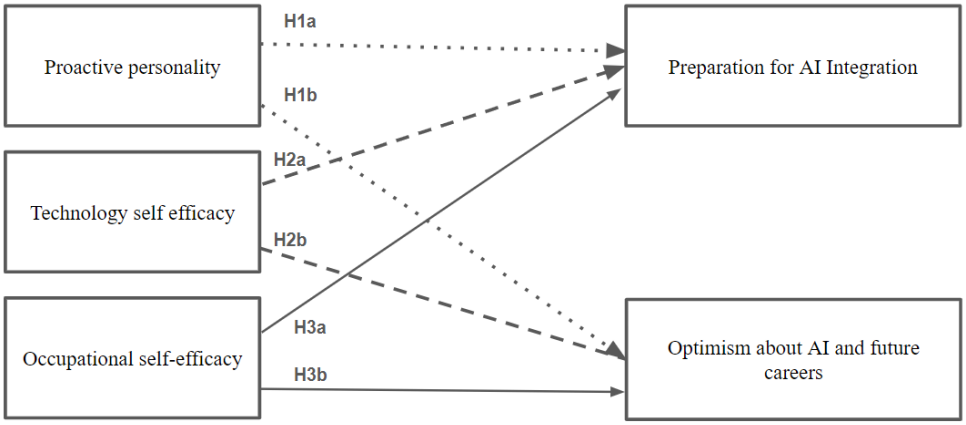
A study by Lent et al. (2017) highlights the role of career self-efficacy in career decision-making and exploration. The findings suggest that career self-efficacy beliefs are crucial for setting future career goals and engaging in activities that support career development, leading to more positive perceptions of future career prospects. Additionally, research by Betz and Hackett (1981) underscores the importance of self-efficacy in career development, particularly for women. Their study shows that higher self-efficacy beliefs are associated with a broader range of perceived career options and more effective career decision-making, which positively impacts future career perceptions.

These studies conclude that occupational self-efficacy significantly shapes positive perceptions of their future careers, primarily through enhanced career decision-making, exploration, and commitment. Based on the discussion above, we propose the following hypothesis.

Hypothesis 3b: *Occupational is positively related to an optimistic view on future AI impact.*

Figure 1 illustrates our research model.

FIGURE 1
RESEARCH MODEL



RESEARCH METHODOLOGY

Participant

Using an online survey, we collected data. The participants are high school students in the East Coast area in the U.S. A total of 141 students participated in the online survey. Within the final sample, 43 % of the participants were male students and 57% were female students. The average age of the participants was 17 years old and the average GPA was 3.78 (weighted GPA). In terms of ethnicity, 79% of the participants identified as Asian, 21% as White American, 5% as African American, and 5% as Hispanic.

Measurement

Proactive Personality

We measured this variable using a 9-item scale developed by Seibert et al. (1999). Example items include: "I am constantly on the lookout for new ways to improve my life," "If I see something I don't like, I fix it," and "No matter the odds, if I believe in something, I will make it happen." Responses were rated on a 7-point scale ranging from "absolutely false" to "absolutely true." In the current study, we averaged these nine items to calculate scale scores, with an internal consistency of $\alpha = .91$.

Technological Self-Efficacy

Technological self-efficacy was measured using a 10-item scale developed by Compeau & Higgins (1995). The items assess respondents' confidence in using new technology to complete tasks independently, without help from others. Example items include: “I feel prepared for most of the demands in my job,” “Whatever comes my way in my job, I can usually handle it,” and “I can remain calm when facing difficulties in my job because I can rely on my abilities.” Responses were rated on a 7-point scale ranging from “not at all true” to “completely true.” We averaged these six items to calculate scale scores, with an internal consistency of $\alpha = .82$ in the current study.

Occupational Self-Efficacy

Occupational self-efficacy was measured using a six-item scale developed by Rigotti et al. (2008). The items assess respondents' confidence in their ability to complete tasks and handle job demands independently. Example items include: “I feel prepared for most of the demands in my job,” “Whatever comes my way in my job, I can usually handle it,” and “I can remain calm when facing difficulties in my job because I can rely on my abilities.” Responses were rated on a 7-point scale ranging from “not at all true” to “completely true.” We averaged these six items to calculate scale scores, with an internal consistency of $\alpha = .82$ in the current study.

Preparation for AI Integration

We developed a 10-item scale to measure readiness for AI technology. The scale asked respondents to assess how prepared they are to use AI technology in their work. Example items include: “How interested are you in pursuing internships that involve working with AI technologies?”, “How likely are you to engage in self-learning (e.g., online courses, tutorials) to improve your AI knowledge and skills?”, and “How prepared do you feel to integrate AI knowledge into your future career after completing your education?”. Responses were assessed on a 5-point scale ranging from “strongly disagree” to “strongly agree.” We averaged these seven items to calculate scale scores, with an internal consistency of $\alpha = .71$ in the current study.

Optimism About AI

We developed an eight-item scale to measure optimism about AI. The scale asked respondents to evaluate how they feel AI will impact their future jobs, either positively or negatively. Example items include: “Do you believe AI will create new types of jobs that don't currently exist in your field?”, “How much do you believe AI will create opportunities for continuous learning and skill development in your field?”, and “How optimistic are you that AI will positively impact society, thereby benefiting your career in the long term?” Eight items were assessed on a 5-point scale ranging froDESCRIPTIVEm “strongly disagree” to “strongly agree.” We averaged these items to calculate scale scores, with an internal consistency of $\alpha = .78$ in the current study.

RESULTS

To test our hypothesis, we employed multiple regression analysis. Table 1 presents descriptive statistics and correlations.

TABLE 1
DESCRIPTIVE AND CORRELATION ANALYSIS RESULTS

	Mean	S.E	1	2	3	4	5	6	7	8	9
1. Age	16.6	1.87	1								
2. Gender	1.56	.49	-.07	1							
3. GPA	5.52	11.45	-.05	.11	1						

4. Race	3.31	1.23	-.15	-.04	.08	1					
5. Major	2.64	1.76	-.04	.14	-.04	.02	1				
6. ProP	4.93	.88	.01	-.20*	.02	-.16	.06	1			
7. TecSE	7.11	1.39	.09	-.09	.03	-.19*	-.05	.38**	1		
8. OccSE	4.24	.85	.12	-.20*	.01	-.25**	.01	.66**	.47**	1	
9. PrepAI	3.23	.79	.21*	-.19*	.07	-.01	-21*	.35**	.36**	.26**	1
10. OptmAI	3.49	.73	.08	-.30**	.09	.12	-.31**	.23**	.28**	.15	.64**

*** <.05, ** <.01 Pro: Proactive Personality, TecSE: Technological Self-efficacy, OccSE: Occupational Self-efficacy, PredAI: Preparedness for AI, OptmAI: Optimism about AI**

This study tested our hypotheses by employing multiple regression analyses. In the analyses, we entered demographic variables as a control model in step 1, then entered individual characteristics variables as a full model in step 2.

Table 2 presents the results of multiple regression analyses for two dependent variables: "Preparedness in AI" and "Optimism about AI." For "Preparedness in AI," the base model revealed that demographic variables accounted for 14% ($p<.01$) of the variance. Age showed a positive association, while being female was negatively related to preparedness. The full model, which included individual characteristics, significantly increased the explained variance to 31% ($p<.001$). Proactive personality and technological self-efficacy demonstrated significant positive relationships with AI preparedness, supporting Hypotheses 1a and 2a. However, occupational self-efficacy showed no significant relationship, failing to support Hypothesis 3a.

Regarding "Optimism about AI," the base model indicated that demographic variables explained 18% ($p <.01$) of the variance. Age was positively associated with optimism, while non-STEM majors showed a negative relationship. The full model, incorporating individual characteristics, significantly increased the explained variance to 27% ($p<.01$). Proactive personality and technological self-efficacy exhibited significant positive relationships with AI optimism, supporting Hypotheses 1b and 2b. As with preparedness, occupational self-efficacy showed no significant relationship with optimism about AI, failing to support Hypothesis 3b.

TABLE 2
MULTIPLE REGRESSION ANALYSIS RESULTS

	PrepAI		OptmAI	
	Control	Full	Control	Full
Gender	-.32*	-.15	-.42**	-.33**
GPA	.01	.01	.01	.01
Race	-.01	.06	.05	.09
Major	-.07	-.08*	-.12**	-.12**
Age	.09*	.09**	.03	.03
ProP		.33***		.16*
TE-SE		.12*		.13**
Occ SE		-.05		-.11
R^2	.14	.33	.21	.29
Adjusted R^2	.13	.31	.18	.27
Incremental R^2		.18		.09
F value	3.67**	10.52***	5.89**	4.56**

*** <.05, ** <.01, ***<.001, ProP: Proactive Personality, TecSE: Technological Self-efficacy, OccSE: Occupational Self-efficacy, PrepAI: Preparedness for AI, OptmAI: Optimism about AI**

DISCUSSIONS

Findings

Our study explored how high school students perceive the impact of AI on future careers and how much they are ready for new technology acceptance. Also, we examined how the individual's proactive personality, technical self-efficacy, and occupational self-efficacy are associated with AI technology acceptance and optimism about future careers.

The results revealed that an individual's proactive personality is positively associated with AI technology acceptance and optimism about future careers. This finding is consistent with the past studies. Many scholars discussed that individuals with proactive personalities are more likely to accept and utilize new technologies, showing higher job performance and innovative outcomes (Abdul Hamid, 2022; Li et al., 2002). Also, past literature demonstrated that proactive individuals are more likely to engage in career exploration and planning activities, leading to clearer career goals and a more positive outlook on future career opportunities (Cai et al., 2015; Jiang, 2017).

Secondly, technological self-efficacy is positively associated with AI technology acceptance and optimism about future careers. This outcome replicated the past studies' findings. Higher levels of technological self-efficacy were associated with a broader range of perceived career options and more positive expectations for future career success (Betz and Hackett, 2006; McDonald and Siegall, 1992). Also, past literature showed that Higher levels of technological self-efficacy are associated with greater confidence in using new technology, which enhances technology acceptance

Lastly, Occupational self-efficacy had no significant relationship with either AI technology acceptance or optimism about future careers.

Practical Implication

Our study provides several implications for practitioners including educators.

First, since individuals with proactive personalities are more likely to accept and utilize AI technologies, educational institutions should implement programs that foster these traits in students. By incorporating activities that encourage initiative, problem-solving, and career planning, schools can help students develop proactive behaviors, which may lead to higher job performance and a more optimistic outlook on future careers in an AI-driven workforce.

Second, given the strong association between technological self-efficacy and AI acceptance, schools and training programs should prioritize technical skills development. Offering hands-on workshops, coding classes, and exposure to AI-related tools can boost students' confidence in using new technologies, increasing their readiness to adapt to AI advancements and broadening their future career options.

Third, career counseling programs should emphasize the importance of proactive personality traits and technological self-efficacy when guiding students. Counselors can help students set goals for AI and technology by encouraging career exploration and planning that aligns with emerging tech trends, ultimately enhancing their preparedness for AI-driven job markets.

Limitation

We need to acknowledge several limitations in the current study. First, our participants were primarily high school students from the East Coast of the U.S., most belonging to the Asian demographic. This sample limits the generalizability of our findings to other populations and geographic regions. Second, data were collected using a self-report survey, which may introduce common method bias and affect the validity of the results. Third, while we developed scales to measure the three dependent variables, we were unable to conduct comprehensive tests to assess the reliability and validity of each scale. Lastly, although we hypothesized that occupational self-efficacy would be positively associated with AI technology acceptance and optimism about future careers, our study did not provide sufficient evidence to support these hypotheses.

Future Research Issues

While the study examined occupational self-efficacy, the results did not highlight its association with AI technology acceptance and optimism about future careers. Future research could investigate why occupational self-efficacy may not have shown a significant positive association. Investigating potential mediating or moderating variables—such as educational interventions, mentorship programs, or exposure to AI technologies—could provide a more nuanced understanding of how occupational self-efficacy influences students' readiness for AI integration in the workforce.

A longitudinal study tracking students over several years could offer valuable insights into how proactive personality and technological self-efficacy impact AI acceptance and career optimism as students transition into higher education or the workforce. This approach would help determine if these traits have a lasting effect or if external factors, such as changes in the job market or advancements in AI technology, alter students' perceptions and readiness over time.

Future research could expand the scope by exploring other personality traits (e.g., openness to experience, resilience) and environmental factors (e.g., socioeconomic status, access to technology, educational curriculum) that may influence AI technology acceptance and career optimism. Understanding how these factors interact with proactive personality and technological self-efficacy can help develop comprehensive strategies to prepare students for an AI-driven job market.

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