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ARTICLE

NAVIGATING AI IN K–12 EDUCATION: EDUCATOR AND ADMINISTRATOR INSIGHTS ON IMPLEMENTATION AND USE

Navegando pela Inteligência Artificial na Educação Básica (K-12): Percepções de Educadores e Administradores sobre implementação e uso

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ABSTRACT | Purpose: This study aims to examine K-12 administrators' and educators' perceptions of the implementation and use of artificial intelligence in educational settings, considering institutional preparedness, ethical use, data security, policy development, and technology adoption practices. **Method:** The study adopted a qualitative approach based on semi-structured interviews with K-12 education professionals from different school contexts. Content analysis was guided by the Technology Acceptance Model and the Stages of Concern framework, allowing the study to examine attitudes, concerns, perceived uses, and implementation processes related to AI in educational institutions. **Findings:** The findings indicate that student use of AI was the primary concern among participants, particularly regarding academic integrity, privacy, critical evaluation of AI-generated outputs, and exposure to inappropriate content. AI management and policy development also emerged as central themes. The study highlights the importance of clear guidelines, stakeholder participation in policy development, safeguards for responsible use, and professional learning communities to support ongoing AI-related learning. **Contributions:** The study contributes by showing that AI implementation in K-12 education requires more than access to technological tools. Clear institutional policies, continuous professional development, alignment among administrators, teachers, students, and families, and ethical and pedagogical criteria are needed to guide responsible AI use. **Originality:** The originality of the study lies in integrating administrator and educator perspectives on AI adoption in K-12 education, connecting practical concerns, institutional policy development, and theoretical models of technology acceptance and educational change.

Keywords | Artificial Intelligence; AI Policy; K-12 Education; Stages of Concern; Technology Acceptance Model.

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RESUMO | Objetivo: Este estudo tem como objetivo analisar as percepções de administradores e educadores da educação básica (K-12) sobre a implementação e o uso da inteligência artificial em ambientes educacionais, considerando aspectos como preparo institucional, uso ético, segurança de dados, desenvolvimento de políticas e práticas de adoção tecnológica. **Metodologia:** A pesquisa adotou abordagem qualitativa, com entrevistas semiestruturadas realizadas com profissionais da educação K-12 em diferentes contextos escolares. A análise de conteúdo foi orientada pelo Modelo de Aceitação de Tecnologia e pelo framework Estágios de Preocupação, permitindo examinar atitudes, preocupações, usos percebidos e processos de implementação da IA nas instituições educacionais. **Resultados:** Os achados indicam que o uso da IA por estudantes constitui a principal preocupação dos participantes, especialmente em relação à integridade acadêmica, privacidade, avaliação crítica das respostas geradas por IA e exposição a conteúdos inadequados. A gestão da IA e o desenvolvimento de políticas institucionais também emergiram como temas centrais. O estudo identificou a importância de diretrizes claras, participação de diferentes stakeholders na formulação de políticas, definição de salvaguardas e fortalecimento de comunidades profissionais de aprendizagem. **Contribuições:** O estudo contribui ao evidenciar que a implementação da IA na educação K-12 exige mais do que acesso a ferramentas tecnológicas. São necessárias políticas institucionais claras, formação continuada, alinhamento entre gestores, professores, estudantes e famílias, além de critérios éticos e pedagógicos para orientar o uso responsável da IA. **Originalidade:** A originalidade do estudo está em integrar as perspectivas de administradores e educadores sobre a adoção da IA na educação K-12, articulando preocupações práticas, políticas institucionais e modelos teóricos de aceitação tecnológica e mudança educacional.

Palavras-chave | Inteligência Artificial; Política de IA; Educação K-12; Estágios de Preocupação; Modelo de Aceitação de Tecnologia.

INTRODUCTION

The rapid advancement of educational technology has created both powerful opportunities and complex challenges for schools. The most recent of these advancements, artificial intelligence (AI), has created a sense of uneasiness around classroom implementation, ethical use, and information retrieval (Ifenthaler, 2024). Adoption of AI has been vastly different from one school to the next (Kaufman et al., 2025). Further complicating the AI landscape is a lack of policies with clear guidelines detailing appropriate use, approved tools, and user protections. Examined in May 2024, one study reported that only 14% of a large randomly selected dataset of K-12 schools had an established AI policy (Eutsler et al., 2025). UNESCO, the U.S. Department of Education, and toolkits such as Teach AI (i.e., TeachAI, 2025) have begun making policy recommendations and AI guides, but more research is essential to capture effective AI implementation. It is imperative to address these gaps so K-12 educators and students are prepared with the knowledge and skills necessary to use AI effectively in their learning environments.

Educators adopted new technologies into classroom environments before the first industrial revolution. Most technologies that became standard within the classroom began in other sectors, like business or defense (Huls, 2022). For example, the overhead projector started as a fixture in the military before eventually being adopted into classroom instruction in 1960 (3M Company, 2002). In the 1980s and 1990s, computers began to make their way into classroom settings (Reyneke, 2024). The World Wide Web changed how students accessed information and gave way to a broader availability of course material through learning management systems (LMS) (Reyneke, 2024). In 2003, the U.S. Department of Education, Office of Educational Technology, released a report evaluating twenty years of education technology policies. One conclusion is that the policies propose that

emerging technologies be used not only as subjects to be taught but also as tools in classroom instruction (Bailey, 2003). In November 2022, the development of AI as large language models ushered in a new era of education, one that will experience more personalized learning, intelligent tutoring systems, and automation of administrative tasks (Zhang & Begum Aslan 2021). These permanent technologies and tools that have changed how we interact with the world around us are called "arrival" technologies (Klopfer et al., 2024). As each era of new technology was introduced into education, policies and guidelines were required to be updated at all levels of the education system (Bailey, 2003).

In a recent study by Eutsler et al. (2025), of 191 randomly selected school districts in the United States, 27 school districts were identified as having developed policies specific to artificial intelligence. In their analysis, the authors found that the AI policies predominantly used the terms "cheat" and "plagiarism" in their policies (Eutsler et al., 2025). The recurring use of these two terms indicates attention to academic integrity over the other identified themes. The different themes identified in the study include responsible use, educator guidelines, data security, and educational practices (Eutsler et al., 2025).

Identified AI Tools used in K-12 Education Systems

Though AI usage data is not readily available, students have access to AI tools whether at school or at home. In a study by Common Sense Media (2025), one in four elementary-aged children has a cellphone by age eight, and 40% are reported as having a tablet by age two. Another study showed that 95% of teens have access to a smartphone (Faverio & Sidoti, 2024). A recent study found seven out of 10 teenagers have used at least one AI tool (Common Sense Media, 2024). In that same study, 63% of participants used chatbots to help them with schoolwork (Common Sense Media, 2024).

One report on AI use among classroom educators found that 18% of teachers are using AI and 15% are trying to use AI (Diliberti et al., 2024). Of those 18%, 11% indicated that they used AI because it was suggested or made available through their school (Diliberti et al., 2024). AI tools that educators are employing in their learning environments include Canva Magic Write, Curipod, OpenAI (ChatGPT), and Quizizz (Poth, 2023). Common Sense Education (n.d.) carefully curated 16 tools for teachers. Among those were MagicSchool AI, Drift, SchoolAI, Brisk Teaching, Curipod, ChatGPT, Microsoft Copilot, and Quillbot. Teachers regularly use AI through their learning management system (e.g., Google Classroom) and for adaptive learning (e.g., IXL) (Diliberti et al., 2024). Among other uses are chatbots, generating instructional materials, lesson planning, and differentiating instruction (Diliberti et al., 2024; Cambium Learning Group, 2024).

Implementing AI into K-12 Classrooms

The response to AI entering the classroom has been nuanced, indicating a range of concerns and acceptance levels among educators. Reactions have ranged from believing AI to be an obstacle in the school rather than a support (Vilcarino, 2025). Conversely, educators recognize that students

are using AI, that it is not a trend, and that they need to accept the new norm (Vilcarino, 2025). Effective technology integration, including AI, supports learning and is productively engaging for students (Stansberry, 2018). Knowledge generation is critical to developing creative and abstract thinking (Lin et al., 2020). Teachers who are reported as using AI still have concerns about AI use in their school systems. These concerns include not having guidelines for AI use in their schools, data privacy when using AI tools, and a lack of training centered around AI use and function (Diliberti et al., 2024). This creates the black-box phenomenon where users are less aware of the mechanics behind AI than they are of the use of AI (Pei et al., 2025; Wells & Bednarz, 2021).

Teachers who have implemented AI into their classrooms see AI as a supporting tool, akin to an AI tutor or an assistant (Shi et al., 2024). It was also reported that some participating teachers anticipated collaborating with AI tools in the future, seeing AI as a co-teacher rather than a supporting tool. (Shi et al., 2024) According to the European Commission (2022), educator competencies include ongoing participation in professional development to remain informed and responsive to AI, engaging with digital materials on the topic of AI, managing AI in their learning environment, effectively use AI for assessment and analysis, use AI to facilitate personalized learning opportunities, and providing opportunities for students to use AI ethically and responsibility.

In a PEW study, 56% of students surveyed reported using AI to complete schoolwork (Sidoti et al., 2025). Those same surveyed students reported using AI for math, which raises concerns because AI tools like ChatGPT are unreliable for math support (Wiggers, 2025). Another report states that 29% of elementary-aged children have used AI to learn about education topics, and 39% of parents state that their children have an app with AI features (Common Sense Media, 2025). Students using AI tools for their schoolwork find it acceptable to use AI to learn more about a topic, but are less amenable to using AI to write essays (Sidoti et al., 2025). Student reports are inconsistent regarding their teachers' stance on AI use for schoolwork (Common Sense Media, 2025).

K-12 administrators see AI as a way to streamline administrative tasks and improve efficiency (Cambium Learning Group, 2024). They also share similar concerns to their classroom teacher counterparts; administrators are also concerned about data privacy, teacher training, and student outcomes (Cambium Learning Group, 2024). It is reported that administrators believe engaging with stakeholders and creating a unified culture of technology is crucial at this junction of digital evolution (Kurkan & Çetin, 2024). K-12 administrators, as leaders of their schools, have a responsibility to set clear goals and facilitate professional learning opportunities for their teachers so that they may effectively integrate AI into their learning environments (Dussealt et al., 2025). Vertical and horizontal alignment must also be considered when developing AI policy and implementation plans (Bernstein, 2025). Engaging in professional learning communities (PLC) creates collaboration opportunities with colleagues to deepen the body of knowledge and lead to successful implementation (European Commission, 2022).

State Education Agencies Informing AI Policy Development

Twenty-seven states and Puerto Rico, including Alabama, Arizona, California, Colorado, Connecticut, Delaware, Georgia, Hawaii, Indiana, Kentucky, Louisiana, Minnesota, Mississippi,

Missouri, New Jersey, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Utah, Virginia, Washington, West Virginia, Wisconsin, Wyoming—have issued guidance for AI use in educational settings. A review of AI for Education's inventory of state-level policies reveals shared priorities across state education agencies. Rather than focusing solely on plagiarism or academic dishonesty, the documents emphasize the ethical and equitable integration of AI into education settings. This shift in focus indicates a broader commitment to responsible implementation, extending beyond simple safeguards to address how AI can be used to support learning outcomes. Additionally, several policies adopt a forward-looking stance, calling for continued adaptation and ongoing professional learning.

The first priority is implementation standards. Precise definitions of AI and any peripheral aspects of AI integration into education are stated. States consistently include references to frameworks (e.g., SAMR, "5 Big Ideas of AI," etc.) and aligning AI use with state education standards.

The second priority focuses on the human element. Of the 28 policies examined by AI for Education, 18 mention a human component. This sometimes looks like human oversight; other instances mention the human-in-human-out approach to AI use. Puerto Rico is highlighted as stating that AI does not replace human abilities. Social and emotional health was tangentially related. New Mexico emphasizes that AI does not replace interpersonal relationships. Connecticut includes wording highlighting the social and emotional risks AI can pose to users.

A third priority focuses on ethical considerations. Across all the priorities student data privacy was a concern. Four state guidance policies mention that they align with the Children's Online Privacy Protection Rule and the Family Educational Rights and Privacy Act. There are also repeated mentions of equity, including specifically biases with AI and providing equal access to AI tools.

THEORETICAL FRAMEWORK

Stages of Concern

The Concerns-based Adoption Model (CBAM) is a framework that delves into the adoption process with a particular focus on the following three dimensions: Stages of Concern (SoC), Levels of Use (LoU), and Innovation Configurations (IC) (George et al., 2006). Seven SoCs are identified with a 35-question questionnaire, and 8 LoUs can be ascertained by following the interview protocols (Kang, 2016). After the two investigative processes, the IC emerges. The SoC dimension involves working with individual stakeholder groups. Each participant will have varying degrees of concern about the latest technology depending on their exposure to the new technology (George et al., 2006).

Technology Acceptance Model

The Technology Acceptance Model (TAM) states that the use of technology is predicated on its intended use (Burgess & Worthington, 2021; Davis, 1989; Davis & Venkatesh, 1996). The TAM model has two dimensions. The first is perceived usefulness (PU), which relates to the benefits users perceive from the new technology (Burgess & Worthington, 2021). The second dimension is

perceived ease of use (PE). This dimension looks at the perception of the effort necessary to use the technology (Davis & Venkatesh, 1996). The two dimensions do not equally impact the actual use of a technology. Perceived usefulness can outweigh perceived ease of use when interacting with a new technology and vice versa (Burgess & Worthington, 2021).

Stages of Concern and Technology Adoption Model

The seven Stages of Concern (SoC) include unconcerned, informational, personal, management, consequence, collaboration, and refocusing. When evaluating them, correlations are observed with the Technology Acceptance Model (TAM) dimensions. The correlations are shown in Figure 1.

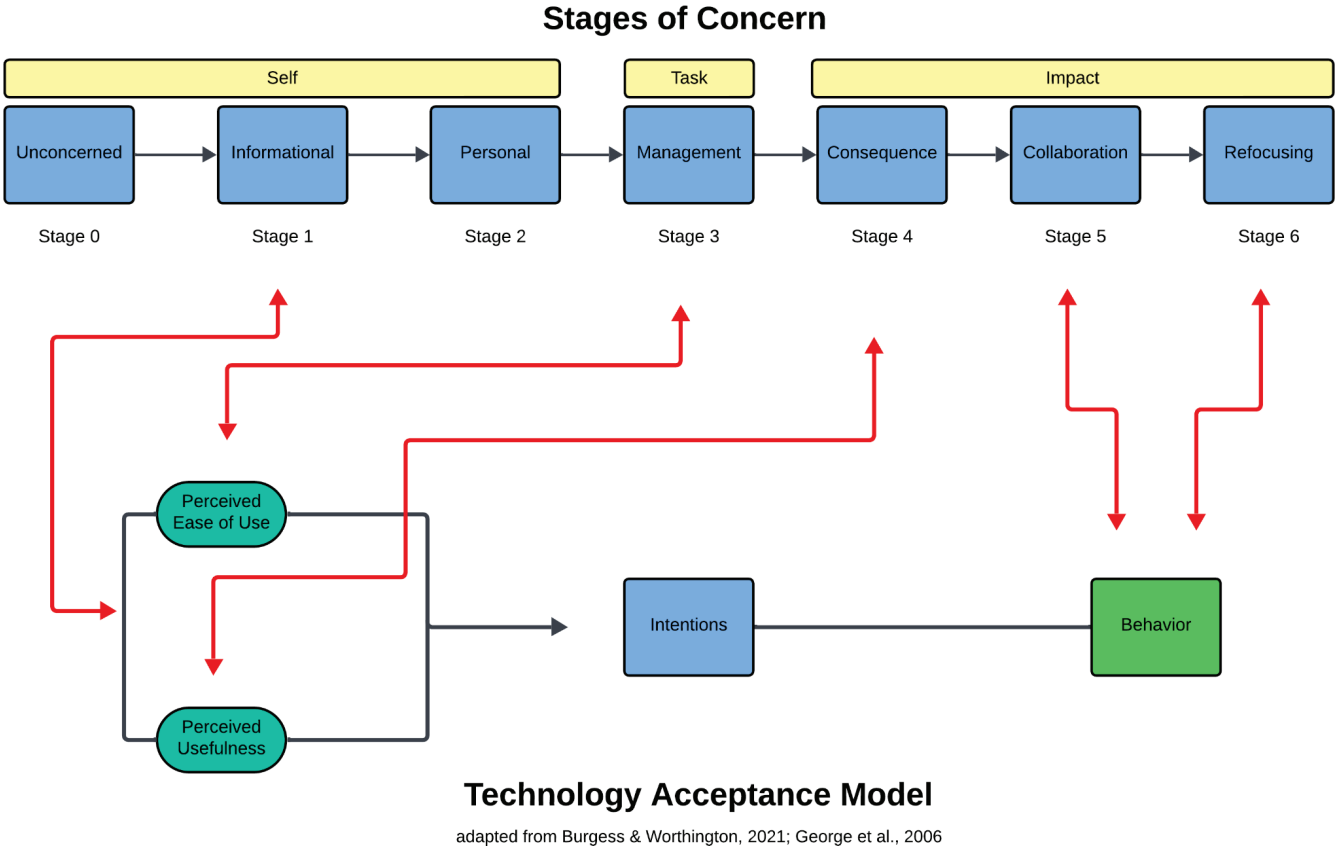

Figure 1. Correlations between the TAM and SoC constructs

Stage 1, informational, informs the TAM constructs of Perceived Ease of Use (PE) and Perceived Usefulness (PU). This occurs because users' initial interactions with the new technology inform their PE and PU (George et al., 2006). Once they have a basic understanding of the technology, they progress to the personal stage, which will vary depending on their needs and situation. Intentions will develop based on the perceptions of ease and usefulness developed during stage 1 (Burgess & Worthington, 2021). Stage 3, management, correlates to the Perceived Ease of Use (PE) TAM construct. This alignment is made because Stage 3 of SoC focuses on infrastructure, managing

the tool, and the actual tool use process (George et al., 2006). Stage 4 of SoC aligns with Perceived Usefulness (PU). Stage 4 concerns the tool's impact on users and performance outcomes. Stages five and six correlate with the intended behavior. By these stages, the user has evaluated the technology to consider how it will meet the user's needs, consider factors that would affect the use, and is now looking to apply the technology with considerations for changes in the future (George et al., 2006). When considering future changes, users may need to return to previous stages to reevaluate the tool in light of changes that have occurred.

Research Questions

This study aims to evaluate the attitudes and concerns of K-12 education professionals about AI use in education systems. This study uses and applies the TAM and SoC frameworks to guide the interview process and answer the following research questions:

1. What AI tools are implemented in K-12 education systems for teachers' and students' use?
2. What concerns do technology administrators and classroom educators have about implementing AI in educational settings?
3. What was the process by which the school districts' AI policy was developed?
   a. How did their concerns influence the AI policy they developed?
4. How are technology administrators implementing AI policies in their school districts?

METHODOLOGY

Study Design

The semi-structured, open-ended interview approach was chosen because it allows the researcher to understand perspectives and thought processes that cannot be observed in a traditional setting (Patton, 1990). The questions developed are compiled into an interview guide, which best allows for the time of the interview to be fruitful with guided questions (Patton, 1990). The questions in the interview guide were designed to explore participants' acceptance, implementation, concerns, and use of AI in their education systems. This approach is similar to Thanomsing and Sharma (2024) and Wang (2013), each of whom applied TAM and SoC, respectively, to their interview studies, which evaluated changes in education systems.

Instrument

The interview guide comprises 15 open-ended questions. It is annotated to assist during the interview and allows for branching. Depending on the participants' responses, the research team can skip over questions that may have been answered in a previous response. The 15 interview questions were open-ended questions designed to allow participants to elaborate on their responses (Kumar, 2019).

Participants

A recent study identified 27 school districts as having developed an AI policy (Eutsler et al., 2025). The interview participants were selected by reviewing personnel in the 27 districts identified in Eutsler et al. (2025). Potential participants were identified through publicly available information on district websites. The selection criteria focused on individuals who worked in technology, instructional technology, or as technology administrators. These roles were selected because they would provide relevant insights into AI policy development and impact on K-12 education systems.

Initial recruitment efforts from the 27 identified school districts resulted in limited responses to initial emails. Eighteen initial emails were sent to identified persons in 18 different school districts. Ten school districts either did not have emails listed publicly for employees (n = 5), the websites would not load (n = 1), or the structure of the website did not yield department employee lists (n = 4). Of the 18 initial emails sent, six received no response. Two people returned responses declining participation. One individual responded and stated their district did not have an AI policy. Another person forwarded the recruitment email to a person in a different department. That person agreed to participate, but no interview was completed due to scheduling and technical issues. Three people returned responses agreeing to participation; of those three, only one interview was completed. Due to challenges, the recruitment pool needed to be expanded. An amendment to the IRB was submitted and approved on April 24, 2025, to allow for a broader recruitment strategy.

Initial participants were emailed directly and invited to participate in the study. The initial email outlined the purpose of the research and included the informed consent document and recruitment email documents. Initial emails were sent on March 19, 2025. Follow-up emails were sent on March 27, 2025. After the IRB amendment was approved, participants were reached through social media. The social media post included information about the research purpose, interview details, and contact information for the research team. From the social media post, one participant reached out directly through the post, and two more were recruited through a snowball effect.

The study aimed to interview five participants; four agreed to participate. Despite the smaller sample, the diversity of the participants provided informative insights. Table 1 summarizes the participants' demographic backgrounds. Jacob (pseudonym used) has two graduate degrees, including one in education leadership. Addy (pseudonym used) has an undergraduate degree in elementary education, a graduate degree in curriculum instruction, and a certification in instructional technology. Owen (pseudonym used) holds an undergraduate degree in computer science and a graduate degree in school leadership. Leah (pseudonym used) has a graduate degree in curriculum and instruction and is currently a doctoral student studying learning technologies.

Table 1. Demographic background of participants

Participant	Role	School Type	State	Student Population	Highest Earned Degree
Jacob	Technology Administrator	Public	Nebraska	7071	Graduate Degree
Addy	Technology Administrator	Independent	Colorado	360	Graduate Degree
Owen	Technology Administrator	Independent	Massachusetts	380	Graduate Degree
Leah	Classroom Educator	Public/Online	Texas	Not Disclosed	Graduate Degree

Zoom Interview Procedures

The interviews were conducted via Zoom, a secure video conferencing application with access provided by the university, because participants were located throughout the United States. Prior to the interview, the informed consent document was sent electronically using Qualtrics. Participants were asked to sign the form before the interview, and their consent to participate was confirmed through Qualtrics. At the beginning of the interview, the participants were verbally asked to consent to the interview recording.

The student researcher conducted the interview via Zoom. The interviews were expected to last 20-40 minutes. The shortest interview was 21 minutes, and the longest was 60 minutes. Session audio and video were recorded using Zoom's native meeting recording feature and stored via the password-protected Zoom cloud. Transcripts were manually generated using Zoom's native feature. Each participant was given a pseudonym. The pseudonym and meeting date were used for file naming conventions and organization. Files were stored on a secure, password-protected digital folder.

Data Analysis

The research team consisted of a higher education scholar and a librarian who was a doctoral candidate at the time of writing. Both team members bring wide-ranging experience from K-12 and higher education systems. The combined experience and knowledge in education as practitioners and researchers framed the analysis of the transcripts. Analysis bias was reduced through structured coding procedures, consistent communication, and reflective discussions regarding the analysis process.

The interviews and initial reflections were conducted between May 13, 2025 and June 23, 2025. Full content analysis was completed from August 16 to September 6, 2025. Krippendorff's content analysis protocols were applied to analyze the data of the interview transcripts. A content analysis requires text to be filtered through contextual lenses to justify findings (Krippendorff, 2019). The contextual lens comes in the form of research questions, which ground and focus the research. Krippendorff (2019) prioritizes replicability of results to ensure reliability.

A code book was created collaboratively by the research team to ensure observations were made without bias from the team. The codebook clearly defines the units of analysis and coding dimensions for each of the included frameworks (TAM and SoC). Within each dimension is a stated definition, inclusion criteria, examples of typical indicators, color tags for TAM, and number tags for SoC. The team also looked for synonyms of the inclusion criteria. Coding rules were also identified: 1) more than one code allowed for TAM (primary and secondary); 2) dominant Stage Rule (SoC); 3) exclusion of sidebar conversations; 4) apply definitions strictly. Adhering to the definition, inclusion criteria, and the coding rules maintained objectivity during the coding process. Coder notes were included in the coding document to allow for reflexivity during the coding process.

The interview transcripts were coded manually. As defined in the code book, colors and number tags were assigned to each part of the included framework models. The transcript was cleaned

to improve clarity. Continuous reflexive notes were taken to document decision-making thought processes, which were done to maintain reliability.

To establish and document inter-coder agreement, the research team first conducted a pilot coding exercise on one transcript. Each coder independently applied the draft codebook to the same sample, then met to compare coding line by line. During this meeting, coders discussed areas of disagreement (i.e., 20% of codes), articulated rationales for their choices, and revised code definitions and inclusion criteria until 100% consensus was reached. This process resulted in refinements to the codebook and the coding document.

Following the pilot, coders used the revised codebook to code the full dataset. Formal reliability coefficients (e.g., Krippendorff's alpha) were not calculated; instead, inter-coder reliability was addressed through iterative consensus-building procedures. Coding agreement was assessed by comparing independently coded segments on additional transcripts at multiple points in the process, discussing discrepancies, and revising code applications until full agreement was reached. When disagreements occurred, coders returned to the codebook definitions and coding rules and resolved differences through discussion.

A sample coding was completed between coders to refine the codebook and the coding document. One key outcome of this refinement was the decision to have a second column for the TAM framework to clearly designate primary and secondary codes. The decision was made to have a second column for the TAM framework to identify the primary and secondary designation clearly. The primary and secondary designations used a heuristic approach where the strongest TAM construct was identified as the primary, and the second strongest construct was recognized as the secondary. To determine the TAM construct participants were most closely aligned with and the SoC stage participants were placed in, the mode was calculated to determine the most often occurring construct or stage.

FINDINGS

The interviews included in this study were analyzed using Krippendorff's Content Analysis method. The analysis was approached deductively, using the research questions to ground the analysis.

Participant's TAM and SoC Interpretation

To gain further insights into how K-12 administrators and educators are responding to AI integration into their education systems, participants were classified according to their dominant SoC stage and their primary TAM construct. These classifications were determined based on the coded interview data using a deductive approach grounded in the two frameworks. Tables 2 and 3 show a breakdown of each construct by participant.

Participants who referenced time saving or streamlining were placed into the personal SoC stages. In contrast, those who discussed the complexities of AI integration into their education

systems were placed in the management stage. Similarly, TAM placements reflected participants' attitudes. Participants who emphasized helpfulness with job performance were placed in the perceived usefulness (PU) construct, while those concerned with training needs, infrastructure, and a learning curve were placed in the perceived ease of use (PE) construct. Participants also showed behavioral intention (BI), actual use (AU), or attitudes towards use of AI (AT) constructs when describing specific scenarios or future plans.

Table 2. Participant Placement in TAM Constructs

Participant	PE	PU	BI	AT	AU
Jacob	16.70%	30%	16.70%	16.70%	20%
Addy	25.90%	37%	3.70%	14.80%	18.50%
Owen	28.10%	31.30%	9.40%	18.80%	12.50%
Leah	38.90%	44.40%		11.10%	5.60%

Table 3. Participant Placement in SoC Stages

Participant	S0	S1	S2	S3	S4	S5	S6
Jacob		7.10%	10.70%	21.40%	39.30%	17.90%	3.60%
Addy			18.50%	14.80%	40.70%	11.10%	14.80%
Owen		6.30%	12.50%	37.50%	31.30%	6.30%	6.30%
Leah	5.60%	16.70%	22.20%	22.20%	27.80%	5.60%	

Jacob

Jacob, a public school technology administrator, presented a dominant concern for student use of AI that was aligned with the consequence stage of the SoC framework. Throughout the interview, Jacob referenced the importance of making the tool available and effectively teaching students to use AI while safeguarding them against harmful or inappropriate material. This is seen when he shared, "There might be some necessary steps that need to be taken to either block it permanently or, ideally, temporarily until we as educators get a better grasp on it and are able to help."

When looking at the TAM constructs, Jacob's primary construct is perceived usefulness. Jacob acknowledges that AI "is a very powerful tool that, yes, we need to grasp better or understand better before we really dive and work with students." He also realizes that, in addition to being a powerful tool, it is also "a valuable tool that they can use to benefit their learning." In his own work environment, Jacob shared that he has used it to streamline his work and improve his efficiency, showcasing the usefulness of this tool.

Addy

Addy, an independent school technology administrator, exhibited primary concerns that were aligned with the fourth stage of the SoC framework, consequence. During her interview, Addy

connected back to student impact and input. She stated the importance of teaching about AI at a young age, "when the stakes are low." Addy has also brought student representatives to the table to discuss what AI use looks like from their perspective. Those student representatives "develop four lessons for an ethics [class]. [...] They are going to teach four of the lessons all revolving around AI and the ethics of AI."

In terms of TAM, Addy's primary construct was perceived usefulness. Overall, Addy's outlook on AI is very positive and sees the benefits, but she cautions against falling "into the 2010, there's an app for this, there's an app for that" approach to AI integration. She describes that when selecting an AI tool, she considers her goal, which informs her decision on which tool to choose. In her experience as a technology administrator, she has observed her teachers using it for lesson planning.

Owen

Owen, a technology administrator in an independent school, demonstrates a moderate alignment with the SoC framework's management and consequences stages. This indicates his management concerns have declined while his student concerns have grown in intensity (George et al., 2006). However, in his case, his primary concern aligns with the management stage of SoC. Owen explained that AI literacy is essential, and if his peers can achieve it, then AI will be applied constructively in the learning environment. He cautions about the amount of student data fed into AI tools when used in educational settings and what that access to students' personally identifiable information (PII) can do, such as violate FERPA. Owen believes that if they can "work out some of the PII issues, [he] can actually see some real merit to using AI to summarize the vast amount of data that you've collected in your feedback to your students [...]."

Owen also bridges two constructs in the TAM model: perceived usefulness and ease of use. Ultimately, Owen aligns more with the perceived usefulness construct of TAM. He sees the benefits of AI in general, but states he has "not found AI to be super useful in my own work a lot of the time." Given Owen's background in computer science, he can create code to accomplish a task that an AI would do. He shared that teachers have requested access to AI tools to generate student feedback, but he does not see a beneficial trade-off between the data accessed by the AI tool and using the tool to give students feedback.

Leah

Regarding SoC constructs, Leah is moderately aligned with three stages: personal, management, and consequence. Of the three, the consequence stage has the most substantial alignment. Leah expresses concerns for teaching students to effectively and ethically use AI in an educational setting. She states, "Kids are using it, they're cheating, it's wrong [...]." Leah describes students turning in work that uses vocabulary beyond their abilities and does not align with the assignment requirements.

Leah aligned moderately with both perceived ease of use and perceived usefulness constructs of TAM. Of the two, perceived usefulness was the more substantial alignment. Leah sees the benefits

of using AI effectively in the classroom, saying, "We'll be able to do things we couldn't do at first, like customize and personalized learning for the individual learner." The caveat is to get teachers to see the usefulness of AI as a helper and not a hindrance to the learning experience.

Leah engages in AI use from the student perspective as a doctoral student. This gives a more nuanced perspective on students' AI use. Leah reports using AI to help her organize her thoughts and synthesize large quantities of information. To her advantage, her field of research includes AI, so there is a lot of overlap between her academic and professional experiences. This lends to understanding the ease and usefulness of AI integration into learning environments.

Participant Comparison

Jacob and Addy are both in administrative roles in school systems that have adopted AI policies. Both of them identified with the same stage in the SoC framework (consequence) and the same TAM construct (perceived usefulness). They both prioritize effectively teaching students about AI and how to use it in a safe and ethical way. Jacob and Addy both share a viewpoint that AI has benefits, but seek to understand it better to use it more effectively.

Owen and Leah show an alternative viewpoint on AI integration into their school systems. Both Owen and Leah work within school systems that have not adopted an AI policy. Their specific roles differ in that Owen is in an administrative role while Leah is in a classroom educator role. Neither of them identifies with one stage in the SoC framework or one TAM construct.

The comparison of the participants shows that not implementing an AI policy with clear definitions and expectations for users creates uncertainty. This is evident by how Owen and Leah, who both work in school systems without an AI policy, do not identify with one stage or construct in either framework. Whereas Jacob and Addy, who both work in school systems with AI policies, have a clearly defined stage and construct they identify with.

Identified AI Tools

A total of 16 AI tools were mentioned across the four interviews. The complete list of AI tools and their function is mentioned in Table 4. All four participants mentioned ChatGPT. MagicSchoolAI had the most mentions (n = 5) despite being mentioned by only three participants. Six of the AI tools named were educational AI tools (e.g., Brisk, CuriePod, Diffit, MagicSchool AI, School AI, Quizlet Plus). Four conversational agents were identified (e.g., ChatGPT, Claude, Copilot, Gemini). Three research assistant tools were reviewed (e.g., Illicit, Research Rabbit, Notebook LM). Two tools are Google tools (e.g., Gemini, NotebookLM). Canva was included in the list of AI tools because the generative AI feature was explicitly mentioned.

Table 4. Breakdown of Identified AI Tools

Tool Name	Type/Function	# of Mentions
AI-note taker (general, not specific tool)	Administrative Assistant	1
Gemini	Conversational Agent	2
ChatGPT	Conversational Agent	4
Copilot	Conversational Agent	1
Claude	Conversational Agent	1
MagicSchool AI	EdTech AI	5
Brisk	EdTech AI	1
School AI	EdTech AI	1
Quizlet Plus	EdTech AI	1
CuriePod	EdTech AI	1
Diffit	EdTech AI	1
Canva	Generative AI	2
NotebookLM	Research Assistant	1
Illicit	Research Assistant	1
Research Rabbit	Research Assistant	1
Grammarly	Writing Assistant	3

Implementation of AI

All participants mentioned student use as their primary concern. Concerns about student use ranged from access to inappropriate material to ethical use (e.g., cheating or plagiarism), user privacy, and not critically evaluating output. Participants also mentioned the need to teach students about the potential pitfalls that overreliance on AI can cause.

Participants commented that the primary use of AI in their professional experiences is to streamline administrative tasks. Jacob uses AI to improve efficiency and save time by creating automated processes. Addy uses various AI tools based on different needs, including Gemini for research purposes, MagicSchool AI for professional purposes, and ChatGPT for conversational purposes. Addy also emphasized that her choice of an AI tool is situationally dependent on her needs or goals. Owen admitted he has not used AI as much as the other participants. Still, he sees the benefit of using AI to translate his more technical, jargon-heavy directions to more user-friendly language. Owen also commented that his background in computer science lends him a unique insight into the inner workings of AI, and he finds that, due to his experience, it is more efficient for him to create code to complete a task than to use the AI tool. Leah has used AI in various ways, including helping her organize thoughts and ideas, generate lessons, generate images, and work on her research as a doctoral student. Leah shared that as a doctoral student, she has used tools like Illicit to synthesize information, look for connections between publications, organize her thoughts, and help improve her writing. Her unique insights as a student and an educator helped provide a fuller picture of how AI is used in educational settings.

AI Policy Development

Half of the participants (*n* = 2) stated that their educational institutions have an AI policy. Jacob and Addy each have a policy in their respective education systems. Owen and Leah did not have a policy in place during their interviews. Each participant indicated, regardless of whether they had a policy or not, the value of having a policy because it sets clear expectations for teachers and students. An emerging subtheme from discussing policy development is the value of talking to colleagues in their professional learning communities (PLC) about how they use AI and their policies. All four participants are engaged in a PLC through social media or professional organizations.

Jacob is in a public school setting. His district's policy is in their board policies and student handbooks. Jacob stated that their AI policy came from the state resource, but they anticipate revisions will occur soon. Future revisions would aim to make it more specific to their educational system. He also expressed, including a focus on tools that would be used, but shared concerns about making it so tool-specific that they confined it to just those identified tools. Jacob commented that their goal is not to restrict AI use, but to create opportunities to teach students how to use it.

Addy shared that her AI policy was written with the school's honor code in mind. The policy development team included stakeholders, including students. The team looked at the school's mission, vision, and core values to develop a policy that reflected the school. The policy also includes a four-tiered system to guide teachers and students on appropriate AI use for each assignment.

Owen stated that attempts have been made to develop a policy in his independent school setting, but they have stalled out. While an apparent reason for the halt to the policy development was not given to him, Owen shared that content departments have no consensus on how AI should be used in an educational setting. He further indicated that some teachers wanted to ban it, others tried to use it, and due to the lack of approved AI tools, they have turned to using their personal ones, which Owen expressed concerns about this leading to unethical sharing of student PII.

Leah shared that a policy is being developed, but details have not been shared with them. She shared that a complaint amongst their colleagues is a lack of accountability due to not having a policy. Leah commented that students are using AI, but not in an appropriate way. She shared that students have used it to complete writing assignments and are not vetting the AI output, so the work they turn in does not adequately respond to the assignment objectives.

DISCUSSION

The study aimed to evaluate the attitudes and concerns of K-12 education professionals about AI in educational systems. The findings of this study revealed four key themes: Student Use; Managing AI and Policy Development; Information and Collaboration; and Application of AI. Each of these themes was identified as significant when evaluating the interview findings. Student Use and Managing AI were the two most prominent themes. These two themes each correlate with a different SoC stage. Student use correlates with SoC stage four, which concerns student use (George et al., 2006). Managing AI and Policy Development correlates with SoC stage three, which concerns managing the tool (George et al., 2006).

Student Use

Student use of AI tools was a recurring topic of discussion throughout each interview. Discussion points included instructing students about AI, whether students should have access to AI, and ethical AI use on assignments. Teachers' attitudes about AI impact student AI use as well. This is seen especially in the ethical use point within this theme. These findings align with SoC stage four, concern for "the relevance of the innovation for students; the evaluation of student outcomes, including performance and competencies; and the changes needed to improve student outcomes" (George et al., 2006, p. 8).

Student use is a broader topic than using AI as a tool, but it is also about learning how to interact responsibly and ethically. Leah stated, "I have students who will use AI and have it write a paper for them. [...] the information doesn't align with the learning objective, or it doesn't fully fulfill the assignment." Starting instruction at a young age is a recommended approach to teaching students about AI, so they have a strong foundation when reaching higher grade levels or even in a professional setting. Recommendations to teach students how to document their AI use in their assignments appropriately are a proposed solution to students using AI and accepting incorrect information as acceptable or fact (Wiggers, 2025). More than just teaching students to use AI responsibly, student use also includes protecting students from harmful or inappropriate material and safeguarding their data.

In the academic setting, different educators in different content areas or grade levels have differing opinions on how much, if any, access to AI students should have. If you have a highly autonomous education system, views on student AI use vary considerably. Owen reported that "different departments had different philosophies," which led to disagreement about how AI should be used, if at all, in the learning environment. Without a clear picture of what AI looks like, school districts cannot effectively bring AI into the classroom (Dusseault et al., 2025).

The ethical use of AI in classwork is a very relevant topic in K-12 education. This is evident in AI policy verbiage. Ethical considerations of student use are a significant concern among educators (Eutsler et al., 2025). While some teachers show concern with AI being a passing trend and not worth the time to learn or integrate, others see the benefits of AI and recognize that it is a part of the education experience. Others see it as a tool to facilitate cheating and seek opportunities to catch students using it unethically instead of using those opportunities as learning moments. Jacob reported that some of his teachers "like to use another application and their AI detection tool to catch them again using AI in their papers [...]." So much focus is placed on students using AI unethically that there is no discussion of what happens to a student who faces accusations of unethical AI use. Addy stated that her school prefers "to start this education when the stakes are low." Ultimately, students need to know how to use AI and be prepared for a world where AI is a part of their academic, professional, and personal experience.

Managing AI and Policy Development

A key part of managing AI in education is developing a clear policy, evidenced by the drastic changes to education technology since ChatGPT became available in November 2022. Education as an industry continuously evolves. This continuous evolution requires regular review and updating of education policies (UNESCO, n.d.). Addy emphasized this by sharing, "Then creating our four-tiered system, [for] teachers assignment by assignment, so that there's clarity for students, because this is what they're begging for." Students notice when their teachers are inconsistent, and based on Addy's feedback, students do not like the ambiguity (Common Sense Media, 2025). Clearly defined terms and language are also necessary to effectively manage AI and develop an AI policy; this aligns with TAM's perceived ease of use construct (Davis, 1989). Clearly defined procedures ensure all stakeholders know what is acceptable and what is not acceptable use. A well-defined policy gives students the knowledge to challenge an accusation about unethical AI use.

Another consideration when managing AI and policy development is alignment within stakeholder groups. There is a spectrum of viewpoints among educators about AI, from buy-in to the belief that AI is just a passing trend and they are not interested in learning to use it. This subtheme is consistent with stage three of SoC, management of AI. When developing the AI policy for her campus, Addy specifically mentioned it was "trust. It was rapport-driven." If there is dissent between stakeholder groups, policy development stalls, and the use of the AI could stray away from being productive and ethical. Owen has experienced this at his own campus when attempts to create a policy "stalled out." At the end, Owen shared, "I was there for the first part of the conversation, but not the stalling part." In some education systems, academic independence is valued highly. Each department has a different viewpoint, and there is a lack of agreement on what AI should look like in their education settings.

Without an AI policy, educators' decisions about AI use in their learning environment are made without external input, possibly leading to unethical use of AI. Some schools include all stakeholder groups, including students, giving them a voice in developing their school's AI policy. There is a noted value of a functional relationship between the curriculum and technology departments. A solid curriculum is foundational to education, and technology is a tool to process and help that curriculum. While in other schools, like Leah's, an AI policy is being developed without input from the teacher stakeholder group that is legally associated with the learning process, leaving key decisions to be made by individuals who are not working daily with students, designing the lessons, or working with the tools handed to them by their administrators.

It is necessary to have both vertical and horizontal alignment across the school system. During the recruitment phase, a recruitment email was sent to a district coordinator for education technology, which was returned saying, "Our district currently does not have an AI policy" (Personal communication, March 21, 2025). This finding echoes Bernstein's (2025) study, which found that there is a need for alignment between stakeholders on all levels on key topics like policy development and enactment.

Information and Collaboration

The value of being a part of a PLC is a repeated theme across all four interviews, which aligns with stage five of SoC, collaboration (George et al., 2006). According to DuFour (2004), a PLC is a continuously developing relationship between educators for the betterment of their students. A PLC facilitates collaboration and furthers participants' knowledge (European Commission, 2022). Jacob shared the benefits of connecting with others at professional conferences, sharing resources with colleagues, and leveraging social media to "follow along with things and try to make sure I have all the right people or right accounts to learn more about it there." PLCs are noted as a source of information sharing and communication, unrestricted by geographical boundaries. In different ways, PLCs replace conventional professional development. Owen stated that one of their professional organizations has provided more learning opportunities than traditional professional development. PLCs segue into more social relationships, further facilitating professional growth through mentorship and collaboration (Torphy & Drake, 2019).

Application of AI

AI has proven helpful when applied to administrative tasks. Discussions in this interview indicate that using AI has helped streamline administrative tasks, including writing emails, translating documents with heavy technical jargon into layman's terms, and writing learning objectives. Each of these described tasks is consistent with the perceived usefulness construct of TAM and stage two (personal) of SoC. Addy shared that her "teachers definitely use it for lesson design [and] to create rubrics." With so many tools–16 tools mentioned in this study covering six different types of AI–there is a caution against approaching AI with the "there's an app for that" mindset, as Addy refers to it. This comment emphasizes the importance of selecting the right AI tool for the task. They are not all made to accomplish the same functions.

With all the helpfulness, there was no mention of concern with how AI could replace users, only how it could help users be more effective in their jobs. If that concern had been evident, it would have aligned with the less optimistic side of stage two (personal) of SoC (George et al., 2006). That being said, there is still skepticism among educator-users. That skepticism leads to not trusting AI with specific tasks, like Leah, who said, "I don't trust it to write the lessons for me." There is a correlation between the black-box concept of not fully understanding AI mechanics and mistrust of AI tools (Pei et al., 2025; Wells & Bednarz, 2021).

Limitations

This study contains limitations. A key limitation of this study is the small number of interview participants (n = 4). Although each interview lasted between 21 and 60 minutes and followed a predetermined set of questions to promote consistency, the small sample constrains the breadth of perspectives represented. As Krippendorff (2019) cautions, content analyses based on limited corpora cannot support broad generalizations, and the findings here should therefore be interpreted

as exploratory and illustrative rather than conclusive. Furthermore, while online interviews are convenient and cost-saving, they present certain limitations. For example, social cues can be missed because of the limitation of seeing only the person on screen. Another limitation is the use of technology to conduct interviews. Low camera quality can contribute to missing social cues because it is challenging to read facial expressions. Additionally, a lagging internet connection can create a frustrating experience and potentially cause crucial information to be missed because a participant or interviewer blips momentarily.

Future Research

The findings in this study highlight diverse approaches to integrating AI into K-12 education systems. Among those findings was emphasizing stakeholder alignment when developing AI policy and making core decisions around AI integration. Future research would look at various stakeholder groups, not focusing exclusively on classroom educators, but also considering perspectives from those in specialized roles outside the mainstream classroom. This would include campus librarians, instructional coaches, and special education teachers. Additionally, stakeholder groups include students as users of the tools and parents of those students.

Further exploration of emerging topics, such as ethical implications for K-12 education, AI literacy instruction for stakeholder groups, and further evaluation of AI policy development, is necessary. Comparative studies across states, districts, and internationally would provide insights into the impact of the socio-political environment on integrating AI into K-12 education systems.

Beyond theoretical exploration, real-world practical application studies would help advance the knowledge base of AI's role in K-12 education systems. Designing AI models, implementing them in classrooms, and studying control and experimental groups would shed insight into how stakeholders engage with AI. Future research should be responsive to the still-changing digital landscape.

CONCLUSION

This study allowed different voices from K-12 education to share what AI integration looks like in their schools. The primary finding is that student use is the primary concern when integrating AI into schools, with AI management as the secondary concern. The concern about student use is consistent with stage four of SoC: consequence or impact on student users (George et al., 2006). Concern about AI management aligns with TAM's perceived ease of use construct (Davis, 1989). While some educators hesitate to jump onto the bandwagon, others are diving right into this "arrival technology" (Klopfer et al., 2024, Introduction section). This is common for "arrival" technologies (Klopfer et al., 2024). Regardless of the reception these emerging technologies, like AI, receive, they are permanent and actively changing the information landscape.

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OpenAI's ChatGPT-4o was used to generate the initial question iterations. ChatGPT was given the prompts "Generate interview questions based on the Stages of Concern questionnaire" and "Generate questions aligned with Technology Acceptance Model." Those prompts generated questions that were then refined, combined, or excluded to create the 15 included questions.

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