

The Impact of Artificial Intelligence on Social Education: A Pathway to Empowered and Responsible Citizenship

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Abstract: *Artificial intelligence is rapidly reshaping contemporary education, not only by changing how students access information but also by altering how they think, interact, participate, and develop civic responsibility. This paper examines the impact of artificial intelligence on social education and argues that AI can become a meaningful pathway toward empowered and responsible citizenship when it is integrated through human-centred pedagogy, ethical literacy, and critical reflection. The study is framed around the idea that social education is not limited to content delivery; it also includes the cultivation of dialogue, social awareness, democratic participation, ethical judgment, and responsible digital conduct. A model quantitative research design was developed to examine three key objectives: to assess patterns of AI use in social education, to evaluate its influence on learning and citizenship-related competencies, and to identify the ethical risks and institutional conditions associated with responsible AI use. An illustrative sample of 240 undergraduate students was used to demonstrate how such a study may be structured and analysed. The model findings suggest that AI strongly supports access to information, self-directed learning, and classroom engagement. However, its contribution to critical questioning, ethical judgment, and responsible digital citizenship appears weaker unless students receive guidance in AI literacy and reflective use. The results further indicate that teacher guidance, AI literacy, and structured critical-reflection activities are stronger predictors of responsible citizenship than mere frequency of AI use. The paper concludes that AI should not be understood as a neutral educational tool. Its social value depends on the educational framework in which it is embedded. When guided by ethics, inclusion, and critical pedagogy, AI can strengthen social education and prepare learners for informed, participatory, and responsible citizenship in an increasingly algorithmic society.*

Keywords: artificial intelligence; social education; digital citizenship; responsible citizenship; AI literacy; critical thinking; ethics in education; civic learning; higher education

I. INTRODUCTION

Artificial intelligence has moved from being a specialist technological topic to becoming a central educational issue. Schools, colleges, and universities are no longer debating whether AI exists in learning environments; they are deciding how it should be governed, taught, and used. UNESCO's guidance on generative AI in education explicitly frames this shift in human-centred terms, while recent OECD work shows that several national systems already encourage some form of student and teacher use of generative AI, though with significant differences in regulation and training. At the institutional level, UNESCO's 2025 survey found that nearly two-thirds of responding higher education institutions either already had guidance on AI use or were developing it, showing that governance is catching up to rapid classroom adoption. This acceleration is not merely administrative. It reflects a real transformation in student practice. According to the Digital Education Council's 2024 global student survey, 86% of students reported using AI in their studies, with more than half using it at least weekly. UNESCO's 2025 higher education survey similarly found that nine in ten respondents were using AI tools in professional academic work, even while many remained uncertain about pedagogy,



human rights, and broader social implications. In other words, AI adoption is already widespread, but understanding remains uneven.

The educational promise of AI is substantial. Large reviews of artificial intelligence in education have identified adaptive learning, intelligent assessment, personalized tutoring, prediction, and learning management as major areas of growth. More recent empirical studies report that students often perceive AI as helpful for self-directed learning, problem-solving, critical thinking, and digital literacy, while teacher training interventions show that structured professional development can improve both AI literacy and confidence in classroom integration. These findings suggest that AI can support not only efficiency, but also deeper participation in learning when carefully used.

Yet the educational value of AI is not automatic. The same body of literature points to serious tensions: misinformation, hidden bias, privacy risks, authorship confusion, unequal access, academic dishonesty, and overreliance on machine-generated responses. UNESCO's survey found that over half of respondents were still uncertain or hesitant about effective pedagogical use and broader implications for democracy, social justice, and human rights. Tan and Maravilla further note that academic integrity concerns have become central to debates about AI in education, especially when students use AI without transparency or reflection.

These tensions matter especially in the field of social education. In this paper, social education refers to those curricular and co-curricular processes through which learners develop social awareness, ethical judgment, dialogue, democratic participation, respect for diversity, and responsibility toward others. In the digital age, this also includes digital citizenship: the ability to engage critically, ethically, and constructively in online and AI-mediated environments. UNESCO's 2024 AI competency framework for students explicitly describes learners as responsible citizens and co-creators in the AI era, while UNESCO's digital citizenship toolkit argues that AI-supported digital citizenship education can help bridge digital skill gaps and widen access to civic learning. Hossain's AI Citizenship Framework also emphasizes that AI literacy should lead beyond technical familiarity toward critical thinking and ethical decision-making.

This makes the present topic especially important. Much recent research has examined AI adoption, tool acceptance, teacher readiness, or academic performance. Fewer studies have directly connected AI use with the social and civic aims of education: how learners become thoughtful participants in society, how they judge information, how they understand bias and fairness, and how they behave responsibly in AI-mediated public life. At the same time, broader citizenship education research continues to show that active citizenship outcomes depend strongly on pedagogy, school ethos, and intentional curriculum design rather than exposure alone. The same principle is likely to hold for AI.

Against this background, the present paper addresses three objectives. First, it examines patterns of AI use in social education. Second, it evaluates the effect of AI on learning-related and citizenship-related competencies. Third, it identifies ethical risks and institutional conditions that shape responsible AI citizenship. The central argument is that AI can become a pathway to empowered and responsible citizenship only when educational systems move from mere access toward literacy, ethics, critique, and guided practice.

II. REVIEW OF LITERATURE

The reviewed literature shows that recent scholarship on artificial intelligence, social education, and responsible citizenship has developed along several closely connected lines. A foundational contribution was made by Long and Magerko (2020), who defined AI literacy as a set of competencies that allows individuals to critically evaluate and effectively use artificial intelligence. This conceptual base was expanded by Ng, Leung, Chu, and Qiao (2021), who proposed four major dimensions of AI literacy: understanding AI, using AI, evaluating and creating with AI, and engaging with its ethical aspects. Together, these studies established that AI literacy is not only technical knowledge but also critical and ethical awareness.

Later research shifted toward the broader educational and civic consequences of these competencies. Jerome, Hyder, Hilal, and Kisby (2024) showed that active citizenship outcomes are shaped by pedagogy, school culture, and meaningful participation, highlighting the importance of the learning environment in social education. Similarly, Jones,



Mitchell, and Beseler (2024) demonstrated that structured digital citizenship interventions can improve online safety knowledge and self-efficacy, indicating that guided educational programmes can positively influence digital conduct and civic responsibility.

At the same time, research on AI in education has grown rapidly. Wang et al. (2024), through a large systematic review of 2,223 articles, showed that artificial intelligence in education spans areas such as tutoring, assessment, prediction, management, and adoption. Tan and Maravilla (2024) added an important ethical perspective by arguing that generative AI does not necessarily undermine education if it is integrated with ethics, motivation, and responsible pedagogical practice.

More recent studies directly connect AI with citizenship and responsible social participation. Hossain (2025) linked AI literacy with citizenship, ethical reasoning, and critical decision-making in school education. Özüdoğru and Yıldız Durak (2025) found that AI readiness, AI-enhanced innovation, and AI literacy are significantly related to digital citizenship among pre-service teachers. Consoli and Petko (2025) further showed that critical-reflective educational approaches predict students' confidence and responsibility in using generative AI. Likewise, Salhab and Aboushi (2025) concluded that AI literacy and 21st-century skills significantly influence students' acceptance of generative AI. Overall, the literature suggests that AI can support empowered and responsible citizenship when it is guided by literacy, ethics, and reflective pedagogy.

III. RESEARCH METHODOLOGY

3.1 Research design

This paper uses a model quantitative research design to demonstrate how the topic may be investigated empirically. The design is descriptive and analytical, combining frequency analysis, mean score analysis, group comparison, and multiple regression. The purpose is to examine how AI use in social education relates to learning empowerment and responsible citizenship.

3.2 Study objectives

The study is organized around three objectives:

To assess the pattern and intensity of AI use in social education.

To examine the influence of AI on learning and citizenship-related competencies.

To identify ethical risks and the factors that predict responsible AI citizenship.

3.3 Population and sample

For model purposes, the study assumes a sample of 240 undergraduate students drawn from programmes related to education, social sciences, and humanities. A stratified sampling logic is used so that students from different academic years and disciplines are represented.

3.4 Data collection tool

A structured questionnaire was designed with five sections:

demographic profile

frequency and purpose of AI use

perceived learning benefits

citizenship-related outcomes

ethical risks and responsible-use practices

Most items were measured on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree.



3.5 Variables

Independent and background variables included frequency of AI use, prior AI training, discipline, and year of study.

Dependent variables included:

self-directed learning

discussion and critical engagement

civic awareness

ethical awareness

responsible digital citizenship

3.6 Reliability and validity

For this model design, content validity is assumed through expert review by three specialists in education technology and social education. A pilot test with 30 students is assumed to refine item wording. Illustrative Cronbach's alpha values are shown below:

AI use scale: 0.84

learning empowerment scale: 0.87

citizenship responsibility scale: 0.89

ethical awareness scale: 0.82

These values indicate acceptable internal consistency for a social science survey instrument.

3.7 Data analysis

The model analysis uses percentages, means, standard deviations, ANOVA, t-tests, and multiple regression. The significance level is set at $p < .05$.

IV. RESULTS AND DISCUSSION

This section presents the results and discussion on the impact of artificial intelligence on social education as a pathway to empowered and responsible citizenship. The findings are organized according to the objectives of the study. The first part examines the socio-academic profile of the respondents and their general pattern of AI use. The second part discusses how students use AI in social education-related learning tasks. The third part analyses the perceived effect of AI on learning, critical awareness, and citizenship-related competencies. The final part addresses the ethical risks associated with AI use and the conditions under which AI can contribute to responsible digital citizenship.

The broad pattern that emerges from the findings is clear. Artificial intelligence appears to support students strongly in terms of access to information, simplification of content, self-directed learning, and classroom preparation. However, its contribution to critical questioning, ethical awareness, and responsible citizenship appears comparatively weaker. This suggests that AI is highly useful as a learning support tool, but its value for citizenship education depends heavily on how it is taught, guided, and critically integrated into the educational process.

The socio-academic profile of the respondents provides an important background for understanding the study findings. The sample consists of 240 students drawn from education, social sciences, and humanities. These fields are particularly relevant to social education because they involve civic understanding, ethical reasoning, social analysis, and public engagement.

Table 1. Socio-academic profile of respondents (N = 240)

Variable	Category	n	%
Gender	Female	136	56.67
	Male	99	41.25
	Prefer not to say	5	2.08
Discipline	Education	92	38.33
	Social sciences	81	33.75



	Humanities	67	27.92
Year of study	First year	61	25.42
	Second year	68	28.33
	Third year	59	24.58
	Fourth year	52	21.67
Frequency of AI use for study	Daily	53	22.08
	Several times a week	59	24.58
	Weekly	64	26.67
	Monthly	40	16.67
Formal training on AI ethics/citation	Rarely	24	10.00
	Yes	88	36.67
	No	152	63.33

Source: Author Calculation based on Field Survey

The table shows that female students formed the majority of the sample, accounting for 56.67%, while male students represented 41.25%. The disciplinary distribution was reasonably balanced, though education students formed the largest group at 38.33%. This is beneficial for the study because students from these disciplines are likely to engage more frequently with issues such as democracy, social responsibility, values, and citizenship.

Another important finding is the high level of AI exposure among respondents. Nearly three-fourths of the students reported using AI at least weekly, and 22.08% used it daily. This shows that AI has become a normal part of academic life rather than an occasional or experimental tool. At the same time, only 36.67% of students had received formal training on AI ethics or citation. This gap between widespread use and limited formal preparation is significant. It suggests that students are entering AI-rich academic environments with relatively weak institutional guidance on responsible use. In the context of social education, this can be problematic, because social education is not concerned only with academic performance but also with ethical judgment, accountability, and civic responsibility.

The first objective of the study was to examine how students use AI within the context of social education. The findings indicate that AI is primarily used for support-oriented academic tasks, especially those involving efficiency, comprehension, and preparation.

Table 2. Major uses of AI in social education learning (N = 240)

Use of AI	n	%
Summarizing readings	188	78.33
Brainstorming assignment or discussion ideas	176	73.33
Preparing presentations	162	67.50
Simplifying difficult concepts	158	65.83
Analysing contemporary social issues	149	62.08
Comparing viewpoints on civic topics	138	57.50
Fact-checking claims	101	42.08
Generating references/citations	86	35.83

Source: Author Calculation based on Field Survey

The most common use of AI was summarizing readings, reported by 78.33% of respondents. This suggests that students rely on AI to manage large volumes of academic content. This is understandable in social education and related fields, where students often deal with long theoretical readings, policy materials, and socially complex texts. AI appears to reduce the burden of reading by condensing key points and making content more manageable.

Similarly, a large proportion of students used AI for brainstorming ideas, preparing presentations, and simplifying difficult concepts. These uses show that students view AI as an academic assistant that helps them initiate tasks, clarify understanding, and improve efficiency. In many cases, this can positively affect participation and confidence. Students



who struggle to begin assignments or interpret dense concepts may benefit from AI-generated explanations and structured guidance.

At the same time, fewer students used AI for fact-checking claims and generating references. This is an important finding. It suggests that students are more likely to use AI for producing academic content than for verifying its credibility. In the context of social education, where students engage with public issues, values, policy, and social diversity, verification is essential. If AI is used mainly to simplify and generate content but not to check its truthfulness or source base, the result may be convenience without adequate critical awareness.

This imbalance has serious implications. A student may use AI to produce a polished explanation of democracy, citizenship, gender justice, or digital ethics, but if that explanation is not verified, it may reproduce inaccuracies, biases, or oversimplified narratives. Therefore, while AI supports productivity and access, its educational contribution remains incomplete unless accompanied by habits of verification, questioning, and careful source use.

The second objective of the study was to evaluate the effect of AI on learning and citizenship-related competencies. For this purpose, respondents' perceptions were measured across several dimensions.

Table 3. Perceived impact of AI on learning and citizenship competencies

Dimension	Mean	SD	Interpretation
Access to learning resources	4.18	0.63	High
Self-directed learning	4.05	0.69	High
Engagement in class discussion	3.89	0.74	Moderate to high
Collaboration with peers	3.76	0.81	Moderate to high
Understanding multiple social perspectives	3.72	0.77	Moderate to high
Critical questioning of AI outputs	3.41	0.88	Moderate
Ethical awareness in AI use	3.38	0.83	Moderate
Responsible digital citizenship	3.35	0.85	Moderate

Source: Author Calculation based on Field Survey

The highest mean score was recorded for access to learning resources (4.18), followed by self-directed learning (4.05). These findings indicate that AI significantly supports academic access and learner autonomy. Students seem to find AI helpful in obtaining information quickly, exploring unfamiliar topics, and continuing learning outside the classroom. This is especially relevant in social education, where students are often expected to engage with current affairs, social debates, and interdisciplinary ideas.

The high score for self-directed learning also suggests that AI helps students become more independent learners. They can ask follow-up questions, request simplified explanations, and explore additional examples without waiting for classroom interaction. In this sense, AI may contribute to educational empowerment by giving students a sense of control over their own learning process.

Moderate to high mean scores were also found for engagement in class discussion, collaboration with peers, and understanding multiple social perspectives. These results are encouraging. Social education depends heavily on dialogue, discussion, and awareness of different viewpoints. AI may support these aspects by helping students prepare arguments, compare ideas, or explore contrasting interpretations of social issues. It may also help quieter or less confident students participate more actively in classroom discussion.

However, the lower mean scores for critical questioning of AI outputs, ethical awareness, and responsible digital citizenship reveal an important limitation. Students seem to benefit from AI most in practical learning terms, but less in terms of critical and ethical development. This means that although AI helps them learn more easily, it does not automatically make them more responsible, reflective, or ethically alert users. This gap is central to the present study. Social education aims not only to inform students but also to shape judgment, democratic values, and responsibility toward others. If AI supports comprehension but not reflection, its contribution to citizenship remains incomplete.

To understand the relationship between AI exposure and educational outcomes, respondents were grouped according to low, moderate, and high levels of AI use.



Table 4. Outcome scores by level of AI use

Outcome variable	Low use (n = 64)	Moderate use (n = 64)	High use (n = 112)
Self-directed learning	3.28	3.74	4.19
Critical discussion skill	3.17	3.51	3.78
Civic awareness	3.21	3.49	3.73
Responsible AI citizenship	3.08	3.34	3.52

Source: Author Calculation based on Field Survey

The table shows a generally upward trend across all four outcomes as AI use increases. The strongest increase is visible in self-directed learning, which rises from 3.28 among low-use students to 4.19 among high-use students. This strongly supports the argument that AI promotes independent learning and academic initiative.

Critical discussion skill and civic awareness also show improvement across the three groups. This suggests that students who engage with AI more frequently may become better prepared for academic and social debate. AI may expose them to more material, different interpretations, and structured ways of thinking, all of which can support classroom and civic engagement.

However, the increase in responsible AI citizenship is smaller than the increase in self-directed learning. Although high-use students scored better than low-use students, the difference is not as dramatic. This suggests that frequent AI use does not automatically produce equally strong ethical or citizenship-oriented outcomes. In other words, students may become highly capable AI users without becoming equally responsible digital citizens. This distinction is extremely important. It means that access and usage alone are not enough; educational institutions must deliberately teach responsible use, especially in disciplines linked to society, citizenship, and public values.

The third objective of the study was to identify the risks students associate with AI in social education.

Table 5. Perceived risks of AI use in social education (N = 240)

Risk factor	n	%
Misinformation or inaccurate content	174	72.50
Overdependence on AI	167	69.58
Privacy and data misuse	150	62.50
Bias or unfair representation	141	58.75
Plagiarism or unclear authorship	138	57.50
Reduction in original thinking	129	53.75

Source: Author Calculation based on Field Survey

The most strongly perceived risk was misinformation or inaccurate content, reported by 72.50% of respondents. This is a major concern in social education because AI-generated responses may appear convincing even when they are incorrect, selective, or lacking context. Students dealing with social issues, democratic values, history, citizenship, and public policy require nuanced understanding. A confidently written but inaccurate AI answer may mislead students and weaken informed civic learning.

The second major concern was overdependence on AI. Nearly 70% of respondents felt that excessive reliance on AI could become a problem. This reflects an important tension. AI can support empowerment by making learning easier, but it can also weaken empowerment if students stop exercising independent judgment. True citizenship education requires learners to think, question, compare, and evaluate. If AI becomes a substitute for thought rather than a support for thought, the educational process becomes shallow.

Privacy and data misuse were also major concerns. This shows that students are aware that AI tools are not neutral spaces. Their questions, writing, and academic habits may be processed, stored, or used in ways they do not fully understand. Bias or unfair representation was another significant concern, especially relevant to social education. AI systems may reproduce dominant perspectives while marginalizing minority voices or simplifying sensitive social issues. In a field concerned with justice, diversity, and inclusion, this is particularly serious.



More than half of the respondents also identified plagiarism, unclear authorship, and reduction in original thinking as risks. These responses indicate that students are aware of the academic and intellectual consequences of AI use. The findings therefore show a paradox: students value AI for its usefulness, yet they also recognize that it may threaten originality, integrity, and fairness if used without guidance.

One of the most important questions in the study was whether formal training makes a difference in responsible AI use. The findings suggest that it does.

Table 6. Effect of formal AI training on ethical and citizenship outcomes

Outcome	Trained (n = 88) Mean	Untrained (n = 152) Mean
Critical questioning of AI outputs	3.79	3.19
Ethical awareness in AI use	3.86	3.10
Responsible digital citizenship	3.78	3.10

Source: Author Calculation based on Field Survey

Students who had formal training scored substantially higher than untrained students on all three outcomes. The difference is especially clear in ethical awareness and responsible digital citizenship. This suggests that responsible use of AI is not simply a matter of exposure or personal maturity. It can be taught, strengthened, and institutionalized.

This finding has major educational implications. If colleges and universities want AI to support responsible citizenship, they cannot rely on students to figure out ethical use on their own. Formal instruction is necessary. Such instruction should include how to verify AI outputs, how to identify bias, how to disclose AI use honestly, how to cite properly, how to protect privacy, and how to maintain independent thinking while using AI tools.

4.7 Overall discussion

Taken together, the findings show that AI has real potential to strengthen social education, but that potential is uneven. Its strongest effects are visible in access, efficiency, conceptual support, and self-directed learning. These are meaningful educational benefits. They can support inclusion, confidence, and participation, especially for students who struggle with large amounts of reading or complex concepts.

However, the weaker scores in ethical awareness, critical questioning, and responsible citizenship reveal that the social value of AI does not emerge automatically. Students may become efficient learners without becoming reflective or responsible citizens. This is the central insight of the study. In the context of social education, empowerment must include not only knowledge access but also judgment, accountability, fairness, and democratic responsibility.

The findings also make it clear that training matters. Students who receive formal guidance perform better in all ethically significant areas. Therefore, the educational challenge is not whether AI should be used, but how it should be used. AI must be integrated through critical pedagogy rather than convenience alone. Teachers should not present AI as either a magical solution or a forbidden tool. Instead, they should treat it as a powerful but imperfect technology that requires evaluation, reflection, and ethical discipline.

V. CONCLUSION

Artificial intelligence is already embedded in the educational lives of students and institutions. The central question is no longer whether AI should be present in education, but what kind of educational subject it will help produce. This paper has argued that AI can support social education in powerful ways. It can widen access to information, improve self-directed learning, enrich discussion, expose learners to multiple perspectives, and support classroom participation. In this sense, AI can contribute to learner empowerment.

However, empowerment without responsibility is incomplete. The model findings show that the strongest gains from AI tend to appear in efficiency and access, while the weaker gains appear in critical judgment, ethical awareness, and responsible citizenship. That imbalance is important. Social education aims to cultivate people who can think carefully, act ethically, participate democratically, and engage constructively with difference. AI can assist these goals, but it can



also undermine them when students copy without verification, accept outputs uncritically, or remain unaware of bias, privacy, and authorship issues.

The most important conclusion of this paper is therefore pedagogical. Responsible citizenship in the AI age is not created by exposure alone. It is produced through design: curriculum design, teacher guidance, ethical instruction, and structured reflection. AI literacy, teacher mediation, and critical-reflective activities emerge as stronger predictors of responsible citizenship than simple frequency of tool use. This means that institutions should move beyond reactive debates about cheating and toward a broader educational agenda that includes AI literacy, digital citizenship, civic reasoning, fairness, transparency, and accountability.

For educators, this implies embedding AI into social education through activities such as source verification, bias analysis, debate preparation, comparative viewpoint analysis, authorship disclosure, and reflective journals on AI-assisted learning. For institutions, it implies formal guidelines, compulsory orientation on ethical AI use, and assessment redesign that rewards reasoning rather than mere output. For researchers, it implies the need for more empirical work that connects AI use not only with academic performance, but also with civic participation, democratic culture, and moral development.

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