PARENTAL MEDIATION OF GENERATIVE ARTIFICIAL INTELLIGENCE IN TEENAGERS

CRITICAL REVIEW AND PEDAGOGICAL FRAMEWORK FOR DIGITAL AUTONOMY

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Abstract

The use of generative artificial intelligence by adolescents is shifting some of their learning, information seeking, creativity and communication towards the family environment. This article aims to develop a pedagogical framework for parental mediation that protects the child without reducing their digital autonomy to obedience or supervision. A critical narrative review of recent studies on the family and artificial intelligence, research on parental mediation and digital literacy, and international documents on children's rights and competences for artificial intelligence is used. The analysis is organized around four strategies: active mediation, co-use, restriction and supervision. The literature shows that dialogue that explains the accuracy, privacy, authorship and limits of the system has more lasting pedagogical value than covert control. Co-use creates opportunities for modeling verification and critical reasoning, while restriction remains necessary when the risk is immediate, but must be proportionate, transparent and reviewable. On this basis, a five-step cycle is proposed: assess the context, discuss, co-determine, practice, and review. The cycle links protection to the gradual development of the adolescent's ability to control resources, protect personal data, declare the help received, and seek support. The article argues that the family, school, and public institutions should use common criteria and concrete examples, not just warnings. The framework provides a conceptual basis for family education programs and for future research in the Albanian-speaking context. The main conclusion is that good mediation is not measured by the quantity of control, but by the quality of dialogue, the transparency of rules, and the increase in self-regulation.

Keywords:digital autonomy; artificial intelligence literacy; family pedagogy; sharing; children's rights.

1. Introduction

Generative artificial intelligence has become part of the daily lives of adolescents. It is used to search for information, explain concepts, translate, generate ideas, edit texts and, increasingly, to seek advice. This use creates opportunities for personalized support, but at the same time affects authorship, privacy, the reliability of information, the well-being and the relationship of the child with adults. For this reason, the issue cannot be treated only as a technical problem or as a debate about allowing and prohibiting a tool. It is a pedagogical issue related to the way the family transfers responsibility from adult control to adolescent self-regulation.

The latest international data makes this task urgent. A UNICEF review, which also includes North Macedonia, shows that up to half of children surveyed in some countries use artificial intelligence systems and that children are more likely than parents or caregivers to be users of them (UNICEF Office of Strategy and Evidence-Innocenti, 2026). The gap in experience within the family undermines the traditional model where the adult is automatically considered the most competent resource. The parent may have more life experience and ethical judgment, while the adolescent may be more familiar with the practical functioning of the tool. Effective mediation should bring these two resources together.

The risks are not limited to copying tasks. Answers may contain inaccuracies, biases, or fabricated sources; prompts may reveal personal information; artificial characters may create emotional intimacy; and continued use may replace intellectual effort. On the other hand, a purely prohibitive approach may push use into hiding, leave adolescents without guidance, and deepen inequalities between families with different levels of digital capital. UNICEF (2025b)

argues that the impact of technology depends on how it is used, the content, the circumstances, and the support the child receives. Therefore, the goal should be safe, critical, and meaningful use, not just reducing exposure time.
The aim of this article is to synthesize the latest knowledge on family mediation of generative artificial intelligence and to propose a workable pedagogical framework. The central question is: how can the family protect the adolescent without hindering the development of digital autonomy? The answer is constructed through the analysis of active mediation, co-use, limitation and supervision, related to children's rights, literacy for artificial intelligence and family-school collaboration.

2. Review approach

The article uses a critical narrative review. Sources were selected according to three criteria: direct relevance to children or adolescents and artificial intelligence; contribution to understanding parental mediation, digital literacy, or children's rights; and timeliness of publication. Priority was given to literature from 2021-2026, official documents of the United Nations, UNESCO, and UNICEF, as well as peer-reviewed studies or new research papers that address family use of generative artificial intelligence.
The synthesis was organized around four analytical questions: (1) what opportunities and risks make mediation necessary; (2) what distinguishes active mediation, sharing, restriction, and supervision; (3) how these strategies relate to autonomy, privacy, verification, and authorship; and (4) what responsibilities lie with the family, school, and institutions. The review does not aim to be systematic or exhaustive. Its function is to compare sometimes seemingly contradictory conclusions and translate them into a coherent pedagogical model.

3. Conceptual bases

3.1. Family pedagogy and supported autonomy

Family pedagogy treats education as a relational process, not as a series of commands. In adolescence, the parent's task changes: from making decisions on behalf of the child to creating the conditions for him to make reasoned decisions. Autonomy is not a lack of boundaries. It is the ability to understand the goal, to foresee consequences, to evaluate resources, to recognize the moment when help is needed and to take responsibility for the choice. In the basic material of family pedagogy, this movement is described as a transition from direct control to supported autonomy (Ceka, 2026).
In the environment of artificial intelligence, autonomy requires new competencies. The adolescent must understand that a fluent answer is not necessarily correct; that the system has no moral responsibility; that the data entered can be stored or processed; and that the help received must be distinguished from the replacement of one's own work. Thus, family rules have pedagogical value only if they enhance the child's ability to act reasonably even when the parent is not present.

3.2. Children's rights in the digital environment

The Committee on the Rights of the Child (2021) places the digital environment within the full implementation of the Convention: best interests, participation, privacy, protection and development must be weighed together. This principle opposes both unlimited exposure to risk and excessive control that excludes the child’s voice. Decisions on the use of artificial intelligence should be age and capacity-appropriate, explainable and open to review. UNICEF

extends this approach by requiring safety, data protection, transparency, non-discrimination, well-being and future-proofing (UNICEF Office of Strategy and Evidence-Innocenti, 2025a). The right to participate is of particular importance. The adolescent should not only be the object of monitoring, but also a partner in setting the rules. This does not mean that every preference becomes a decision. It means that the reasons are heard, the criteria are explained, and the limit is linked to an identifiable risk. Such a rule is more likely to be understood, accepted, and transferred to new situations.

3.3. Artificial Intelligence Literacy

UNESCO's framework for student competencies organizes AI literacy into four dimensions: human-centered thinking, ethics, techniques and applications, and systems design (Miao, Shiohira, & Lao, 2024). For the family, these dimensions can translate into everyday questions: Who produced this answer? What sources are they based on? What is missing? What data am I providing? Are there consequences for someone else? Does this use build on my skill or replace it?

Literacy is not just technical knowledge. It includes ethical judgment, awareness of boundaries, the ability to verify, and the willingness to stop or ask for help. Adams, Pente, Lemermeyer, and Rockwell (2023) emphasize that the use of artificial intelligence in pre-university education must preserve human agency, fairness, transparency, and accountability. These principles shift the focus from the question "is the tool permissible?" to the question "for what purpose, in what way, and with what responsibility is it used?"

4. Parental mediation strategies

The emerging literature on families and AI suggests that parents use combinations of dialogue, sharing, restriction, and supervision. Strategies are not fixed labels for families; the same parent may use dialogue for homework, sharing for creativity, and restriction for personal advice or risky content. The value of a strategy depends on the goal, age, skill level, sensitivity of the data, and severity of the consequence.

Table 1.Parenting strategies and their pedagogical function

STRATEGY	Purpose	Pedagogical value	Danger when used poorly
Active mediation	Explanation and dialogue	Develops verification, ethical reasoning, and help-seeking	It becomes an abstract lecture with no connection to real use.
Sharing	Shared use and reflection	Models questions, comparing sources, and declaring help	The parent takes over and weakens the child's agency
restriction	Prohibition or conditioning of use	Protects when danger is imminent or ability is still insufficient	It encourages concealment and does not build competence if left unexplained.
Oversight	Observation of use and consequences	Enables early intervention and border review	It violates privacy and trust when it is secret or unrestricted.

4.1. Active mediation

Active mediation involves conversations that explain how the system works, why a response should be verified, what data should not be shared, and when use should be declared. In a study of 853 adolescents, active mediation was associated with higher AI literacy, more calibrated trust, and lower perceptions of fear or unfamiliarity with the technology, while restrictive mediation did not show the same independent association (Zhang, Liu, Liu, Xie, & Chao, 2025). This finding supports dialogue, but should not be interpreted as evidence that every conversation automatically produces competence. Quality, timing, and connection to a concrete action are crucial.

Useful dialogue is short, repeatable, and relevant to the situation. Instead of a blanket warning that "AI is wrong," a parent might ask their teen to find two independent sources for a claim. Instead of the phrase "don't give out personal information," they might consider together which elements of a request identify a person. In this way, the rule becomes a skill.

4.2. Sharing

Co-use means that the parent and adolescent use or explore a system together. Interviews with families show that the use of generative artificial intelligence is intertwined with learning, creativity, adult work, and fun, while the parent's strategy is shaped by the family's communication norms, trust, and technical competence (Zhang et al., 2025). Co-use is especially valuable when both parties acknowledge that they may not know the answer and treat the system as an object of inquiry, not as an authority.

The danger is that co-use turns into substitution. If the parent writes the request, chooses the answer and completes the task, the teenager remains a spectator. The pedagogical model requires a division of roles: the teenager formulates the goal and justifies the choice; the parent asks questions, seeks evidence and helps assess the consequences.

4.3. Restriction and supervision

A restriction is reasonable when the consequences could be severe and the ability to self-protect is insufficient: giving out sensitive data, creating or distributing manipulative images, advice on self-harm, sexualizing interactions, or replacing assessed work in school. But the restriction must have a purpose, duration, and review criteria. An unlimited ban on any use does not distinguish between risk and opportunity and does not teach the adolescent how to act when control is lacking.

Ni, Dai, and Brown's (2025) study of middle school students shows a more complex picture: restrictive mediation can shift usage from entertainment to schoolwork, but parents are less likely to use active mediation for AI-based learning. This means that restrictions can change overt behavior without necessarily building self-regulation. Supervision should be transparent, proportionate, and as intrusive as possible. Secret monitoring of history or conversations can undermine trust and drive usage to other platforms.

5. What the recent evidence shows

The new studies provide three lessons that should be taken together. First, parents and adolescents do not necessarily see the same risks. Yu, Sharma, Hu, Wang, and Wang (2025) found that parents were primarily concerned about data collection, misinformation, and inappropriate content, while adolescents cited addiction to virtual relationships, social misuse

of content, and unauthorized use of data. A family policy that listens only to one side leaves important gaps.

Second, digital capital and relationship climate influence the mode of mediation. Song et al. (2026) show that parental digital literacy, trust in AI, privacy concerns, awareness of algorithmic risk, and home-school collaboration shape the family learning environment. Students' AI literacy profiles are also linked to family resources and self-regulated learning (Wang, Wang, & Zhang, 2026). Therefore, it is not enough to tell parents to "monitor more"; they need knowledge, role models, tools, and institutional support.

Third, observed associations at one point in time should not be immediately translated into causal claims. A longitudinal study of 2,500 parent-adolescent pairs on digital health literacy found that families with more mediation had adolescents with higher interpersonal literacy, but changes in mediation did not predict subsequent changes within the same person (Tercova, Muzik, Dedkova, & Smahel, 2025). Although the field is not identical to artificial intelligence, methodological learning is important: relationship quality, school, peers, and prior skills may explain part of the association.

These results do not diminish the role of the family; they make it more realistic. Mediation is not a single dose that produces a predictable effect. It is an ongoing, co-created, and context-dependent process. Therefore, assessment should look not only at how often the parent and child talk, but also at what they do during the conversation, how decisions change, and whether the adolescent transfers the skill to new situations.

6. The pedagogical cycle of mediation

To translate the literature into practice, the cycle is proposed: assess context-negotiate-co-decide-practice-review. It is not a rigid technical protocol, but a way to make sustainable decisions. Each step links protection to an indicator of autonomy.

Table 2.The five-step cycle for digital autonomy

Step	Guiding question	Family action	Autonomy indicator
1. Evaluate	What is the goal and how big is the risk?	Distinguish between age, ability, data sensitivity, and the consequence of error	The teenager explains why the tool is or is not suitable.
2. Talk	What can and cannot the system do?	Discuss accuracy, bias, privacy, authorship, and well-being	The adolescent identifies boundaries and formulates critical questions
3. Co-determine	Which rule is fair and understandable?	Define permitted uses, prohibited data, and cases for assistance	The adolescent reasons the rule and implements it without constant control.
4. Practice	Can the rule be applied to a real task?	Compare sources, edit a request, and write a statement of support	The adolescent verifies, protects data, and distinguishes help from replacement

Step	Guiding question	Family action	Autonomy indicator
5. Rishiko	What worked and what needs to be changed?	Assess consequences and increase or decrease support according to behavior	The adolescent reflects, corrects the mistake and asks for help when needed.

In the assessment step, the family distinguishes low-risk use, such as idea generation, from high-risk use, such as personal or health advice or content that includes sensitive data. In the dialogue step, the parent does not just provide the conclusion, but makes the reasoning apparent. Co-determination turns the criterion into understandable agreement. Practice tests whether the rule works. Review keeps supervision related to behavior and not to general fear.
The cycle is developmental. A younger or inexperienced adolescent may need more sharing and tighter boundaries. As the capacity for verification, privacy, and reflection increases, the parent can reduce supervision. If concealment, damage, or uncontrolled use occurs, support can be temporarily increased. Thus, autonomy is not granted once and for all; it is negotiated and tested through responsibility.

7. Implications for family, school and policies

7.1. Family

Families need a concise, reviewable agreement. It can define: acceptable purposes of use; data that is not entered into the system; cases when verification with independent sources is required; how to declare help; and situations when the teenager should turn to an adult or professional. The agreement should contain examples, because terms like “responsible use” remain vague without concrete situations.
The parent does not need to know more than the child about every app. He or she should model a responsible way of thinking: to check the source, accept uncertainty, protect data, not delegate moral judgment, and correct mistakes. This modeling is most reliable when applied to the parent's own use.

7.2. School

The school should give families the same criteria it uses with students. The AI policy should distinguish ideation, feedback, translation, editing, and support from the undeclared production of the task. Teachers can provide examples of acceptable requests, ask for brief notes on how to use it, and evaluate the process, not just the final product. When the family and school use conflicting messages, the teenager learns to negotiate gaps, not to develop integrity.
Family-school collaboration is also a matter of equity. Not all parents have the same digital experience, language, devices or time. Instructions should be clear, concise, multilingual when necessary and accompanied by practical demonstrations. This is especially important in the Albanian-speaking context of North Macedonia, where families may use several languages and where the quality of the system’s responses varies by language and topic.

7.3. Institutions and technology providers

The responsibility cannot be transferred to the family alone. Educational institutions should develop standards for privacy, authorship, assessment and child protection. Technology providers should provide age-informed information, transparent controls, secure reporting

mechanisms and defaults that minimize data collection. UNESCO's guidance on generative artificial intelligence calls for a human, age-appropriate and privacy-oriented approach (Miao & Holmes, 2023). Without these conditions, the parent faces rapidly changing systems and risks that he or she cannot manage alone.

8. Discussion

The synthesis supports the shift from the control paradigm to the co-regulation paradigm. Control asks whether the adolescent used the device and for how long; co-regulation asks about the purpose, the quality of reasoning, the data shared, the manner of verification, and responsibility for the product. This shift does not weaken parental authority. It makes authority explainable and developmentally relevant.

However, there is no universal strategy. Dialogue may be insufficient when the risk is immediate; restriction may be protective in one situation and obstructive in another; co-use may build competence or replace the adolescent's work. Therefore, the quality of mediation should be assessed through the fit between risk, ability and level of autonomy. The proposed cycle makes this fit visible and reviewable.

An important conclusion is that parent and child literacy develop together. The technology gap is not solved by turning the teenager into an unsupervised expert or the parent into an all-knowing supervisor. It is solved by combining the young person's technical expertise with the adult's judgment, care, and responsibility. This relationship requires trust, but trust is not an absence of verification; it is a willingness to do the verification together.

For the Albanian-speaking context, the framework opens a research agenda. Validated instruments in Albanian, dyadic studies that collect data from parent and adolescent, samples that include urban and rural areas, and analyses that distinguish between use for school, creativity, information, and personal advice are needed. Longitudinal studies or controlled interventions would help to distinguish the effect of mediation by resources that the family already has.

9. Limitations and future directions

This article is a critical narrative review and does not claim to systematically cover every database or publication. The field is changing rapidly, some of the research is cross-cutting, and definitions of AI, literacy, and mediation are not entirely consistent. Some findings come from countries with different infrastructure, policies, and family norms than North Macedonia. For this reason, the framework should be treated as a theoretical proposition based on current evidence, not as a proven formula for every family.

Future research should measure the quality of dialogue, not just its frequency; use practical tasks for verification and privacy; examine the role of the parent-adolescent relationship; and test whether the five-step cycle improves self-regulation without increasing conflict. Particular attention should be paid to children with diverse needs, multilingual families, and disparities in access and support.

10. Conclusions

Generative artificial intelligence places the family in a dual role: to protect the adolescent from inaccuracy, privacy invasion, manipulation, and job substitution, but also to prepare him or her to act independently in an environment where these systems will be present. Neither blanket prohibition nor unconditional trust fulfills this task.

The contribution of the proposed framework is the connection of four parenting strategies to the cycle of assess-negotiate-co-decide-practice-review. Active mediation makes the reasoning visible; sharing exercises it; restriction protects when the risk is high; supervision provides information for review. All four are valuable only when they are proportional, transparent and oriented towards increasing the adolescent's capacity. Good mediation is not measured by the amount of control, but by the quality of the dialogue and the child's ability to verify, to protect privacy, to declare help and to seek support in a timely manner.

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