

Repositioning *AI* as a *Thinking Partner* in *Child-AI Collaboration*

Interview-grounded insights for role-differentiated child-AI collaboration

1. MOTIVATION & OBJECTIVE

(a) **Motivation:** While the risks of children's AI use—such as cognitive offloading and reduced reflection—are well documented, design strategies to address them remain scarce. Prior work focuses on new systems, offering little insight into children's use of general-purpose LLMs. We therefore turn to **real-world adult guidance to inform child-AI collaboration.**

(b) **Objective:** How should child-AI collaboration be structured to **prevent offloading core thinking processes** while preserving children's agency as active thinkers during inquiry and idea generation?

3. KEY FINDINGS

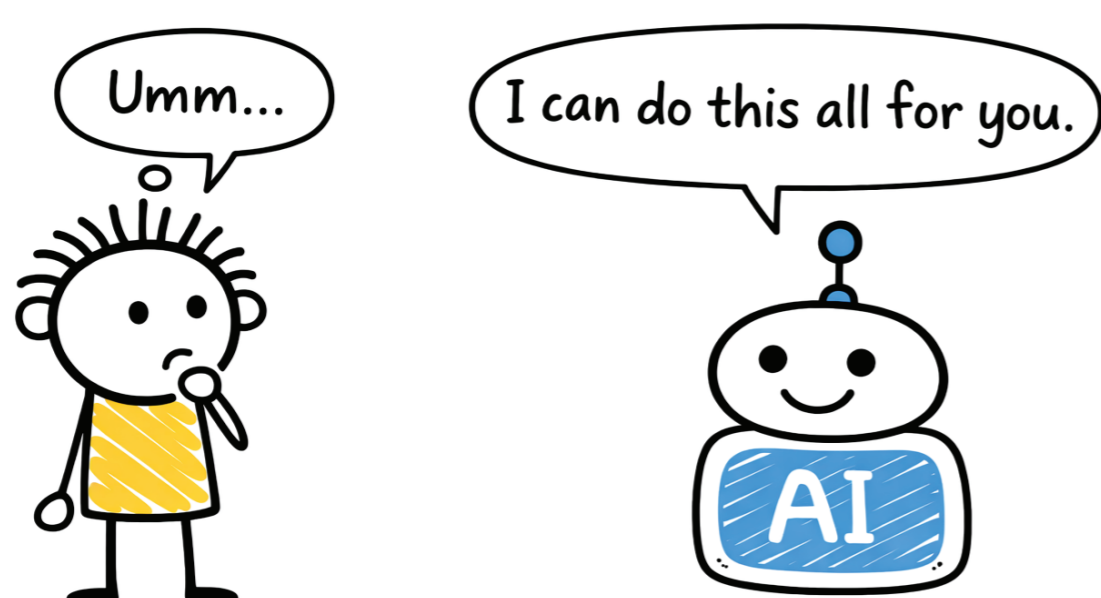
Interview analysis revealed four recurring insights:

(a) Positive potential



AI can sustain children's curiosity by responding immediately when adults are unavailable.

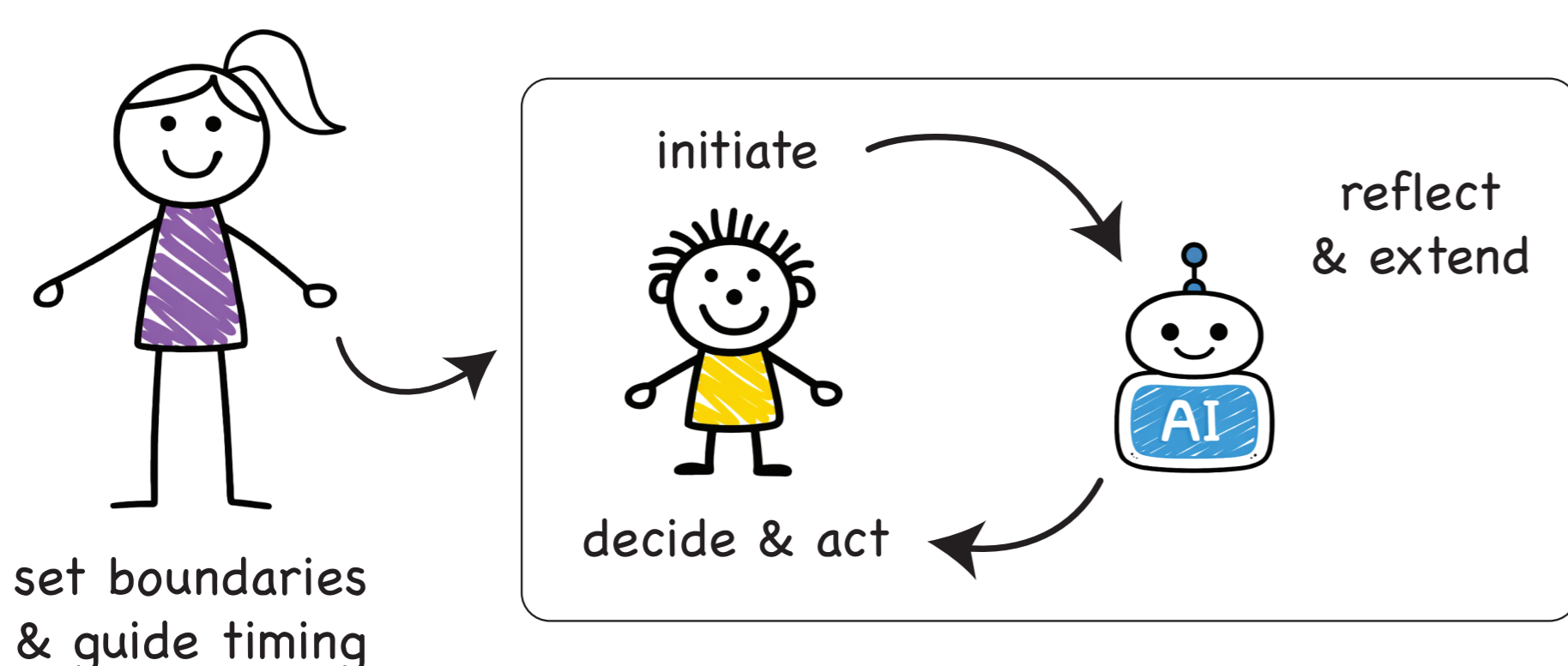
(b) Key concern



Early or unsolicited AI input can constrain children's ideas and lead them to defer judgment too quickly.

4. CONCEPTUAL FRAMING

(a) **Structure:** Building on the two strategies outlined above, we propose a **role-differentiated child-AI collaboration** that preserves children's agency, suggesting how child-AI interaction should be structured—with **distinct roles and stepwise use**, rather than one-shot outputs, as illustrated in the figure below.

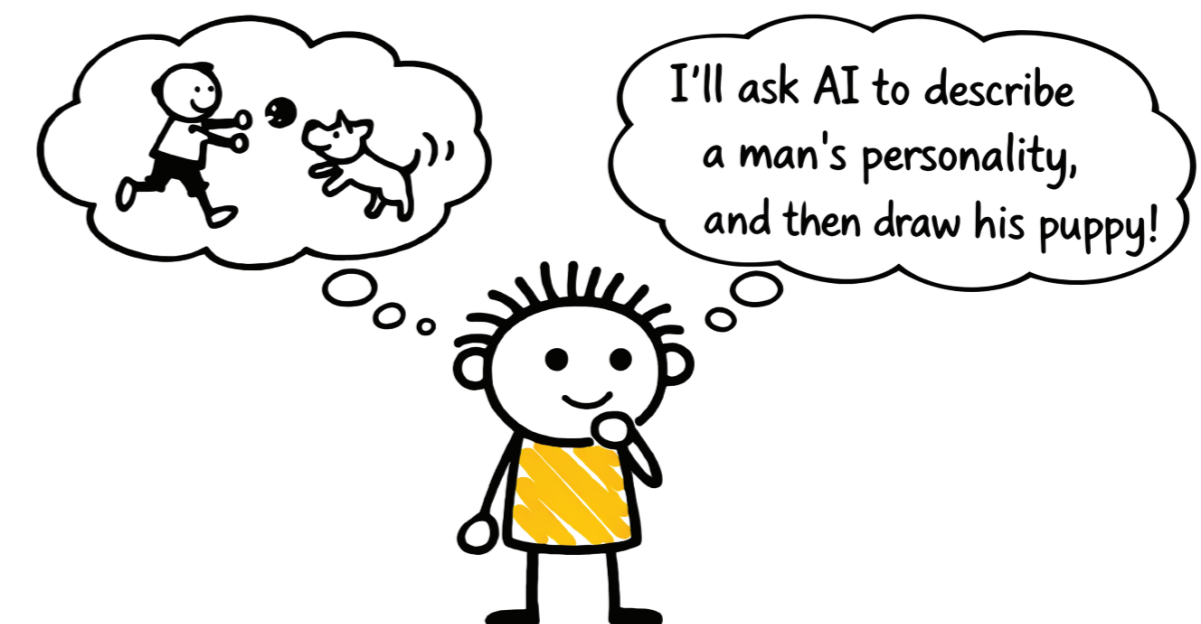


2. CONTEXT & APPROACH

(a) **Context:** Children use LLMs in activity-based contexts such as inquiry, information exploration, and idea/content generation, often with adult guidance.

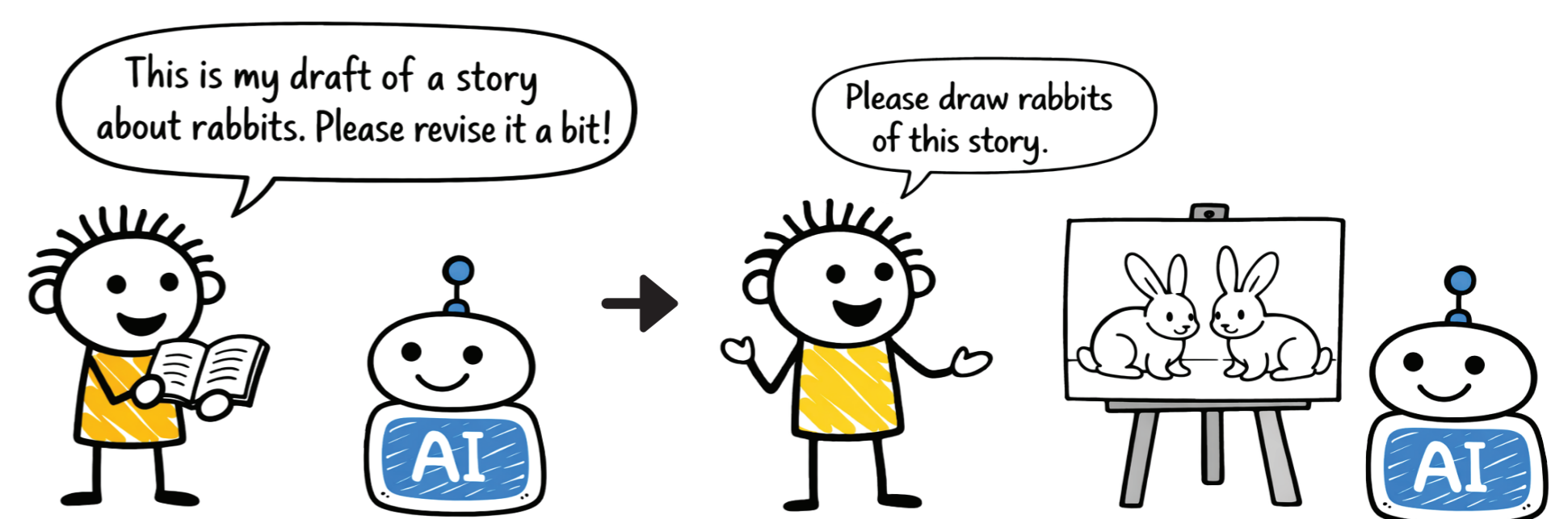
(b) **Approach:** We conducted **in-depth interviews** with three stakeholder groups—**5 parents** of elementary school children using AI/LLM systems, **5 elementary school teachers** experienced in AI/LLM-supported activities, and **4 child-development researchers** (\geq Master's degree). Interviews explored current child-AI use, perceived benefits and concerns, and how adults guide or intervene in these interactions. (KAISTIRB-2026-02)

(c) Strategy 1



Children should engage in idea generation and problem formulation before consulting AI.

(d) Strategy 2



Staged AI use (rather than one-shot generation) preserves children's ownership of thinking.

(b) **(Co-)agency:** We define **children's agency as their active role in initiating and directing their own thinking processes.** This agency is conceptualized through **role-differentiated collaboration**, where children lead their thinking and AI provides complementary support.

(c) **Role of AI:** AI should not act as an answer-giver or decision-maker, but as a **thinking partner—working with children toward outcomes rather than producing them for them—supporting reflection and refinement without taking over the direction of children's thinking.**

(d) **Takeaway:** **Child-centred AI should step back from one-shot answers and act as a thinking partner, preserving children's ownership of thinking while enabling meaningful decisions in AI-mediated collaboration.**