

REVIEWER'S REPORT

Manuscript No.: IJAR-59276

Title: From AI Companionship to Social Scaffolding: A Supervised Avatar Model for Skill Generalization in Autistic Children.

Recommendation:

Accept as it is
 Accept after minor revision.....
Accept after major revisionyes.....
 Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality			Y	
Techn. Quality			Y	
Clarity			Y	
Significance			y	

Reviewer's ID: JPR-Dr.Shaweta sachdeva

Detailed Reviewer's Report

1. The manuscript addresses a timely and relevant topic by proposing a supervised AI-avatar model for skill generalization in autistic children. The conceptual distinction between avatar performance and real-world human-context transfer is clearly articulated and should remain central throughout the manuscript.
2. The title is informative but somewhat long. Consider shortening it while retaining the key concepts of supervised AI avatar, autism, and skill generalization.
3. The abstract is well structured, but it contains several methodological details that may be more appropriate for the main text. Consider making the abstract more concise and explicitly stating the type of article (conceptual model/research agenda) at the beginning.
4. The manuscript should provide a clearer explanation of how the proposed supervised avatar differs technically and functionally from existing conversational AI systems, virtual humans, social robots, and AI-assisted behavioral platforms.
5. The literature review appropriately acknowledges that existing studies cannot directly establish the effectiveness of the proposed model. However, the criteria used to select the studies published since 2021 should be described more systematically, including databases searched, search terms, inclusion/exclusion criteria, and screening procedure.
6. Since the article uses evidence from several different intervention modalities, a summary table of previous studies would substantially improve the manuscript. Suggested columns include author/year, participant characteristics, AI technology, target skill, intervention duration, comparator, outcome measures, generalization evidence, and major limitations.
7. The manuscript repeatedly emphasizes generalization, which is appropriate, but the operational definition could be strengthened by explicitly distinguishing generalization across people, settings, materials, communication partners, and contexts.
8. The proposed mechanism contains four links—clinician-selected target, rehearsal with varied cues, prompt fading/feedback, and opportunities for real-world practice. Consider presenting this

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mechanism as a formal conceptual framework or logic model showing inputs → intervention processes → proximal outcomes → generalization outcomes.

9. The discussion of the avatar as an “instrument for instruction” rather than a friend or therapist is important. However, the manuscript should provide more concrete technical safeguards for preventing anthropomorphic attachment, inappropriate disclosure, dependency, and conversational drift.
10. The eligibility and target-selection section is strong, particularly the exclusion of high-risk behaviors and emergency situations. The authors should further clarify who has final authority when the child, caregiver, RBT, and supervising clinician disagree about the appropriateness of a target.
11. The proposed intervention workflow is clearly described, but additional information is needed regarding the technical architecture of the avatar, such as model type, prompt-control mechanism, content filtering, logging, human-in-the-loop architecture, and procedures for handling unexpected model outputs.
12. The stopping and handback rules are a valuable component of the model. Nevertheless, the manuscript should specify how “unusual dependence,” “distress,” and other safety triggers will be operationalized so that different clinicians can apply the criteria consistently.
13. The outcome framework appropriately prioritizes unprompted use with unfamiliar people and materials. The authors should additionally define primary and secondary endpoints, measurement frequency, minimum clinically meaningful change, and procedures for handling missing observations.
14. The proposed multiple-baseline design is suitable for an exploratory single-case research agenda, but the manuscript should provide stronger justification for the proposed number of participants/tiers and explain how experimental control, treatment fidelity, observer agreement, and threats from concurrent interventions will be addressed.
15. A particularly important issue is the distinction between the effect of AI technology and the effect of additional practice opportunities. The manuscript recognizes this limitation, but a future study should clearly specify an attention- and time-matched human-practice comparator to isolate the incremental contribution of the avatar.
16. The manuscript should provide greater detail on data privacy and cybersecurity, particularly because the proposed system involves children, potentially sensitive behavioral information, session logs, and possibly audio/video data.
17. The equity discussion could be expanded. The authors should consider differences in access to devices, reliable internet connectivity, caregiver availability, language, communication modality, socioeconomic circumstances, and culturally appropriate scenarios.
18. The manuscript appropriately incorporates autistic stakeholder participation. However, the proposed participatory process should specify how autistic children and adults will contribute to target selection, interface design, scenario development, acceptability assessment, and interpretation of findings, rather than limiting participation to consultation.
19. Figure 1 provides a useful visual representation of the supervised avatar cycle. It could be strengthened by adding explicit decision points and stop/handback pathways, particularly following failed rehearsal, distress, safety triggers, or unsuccessful real-world transfer. The current figure emphasizes the five-stage progression and human oversight.
20. Figure 2 is useful in separating transfer, practice/fidelity, child experience, burden/access, and safety/relationship domains. Consider making the distinction between primary outcome, process outcomes, implementation outcomes, and safety outcomes visually more explicit.
21. The limitations section is appropriately cautious, but the manuscript could further discuss potential selection bias, novelty effects, Hawthorne effects, technology familiarity, caregiver-mediated effects, and differences in baseline communication abilities.

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22. The manuscript would benefit from a dedicated subsection discussing ethical considerations for AI use with minors, including informed consent, assent, data minimization, explainability, algorithmic bias, model hallucination, accountability, and procedures for reporting adverse events.
23. Please carefully verify all references, DOI links, publication details, and claims attributed to the 2025–2026 studies. Since several cited studies are recent and are being used to justify specific aspects of the proposed framework, bibliographic accuracy is particularly important. The reference list contains multiple recent studies that directly support the manuscript's rationale.
24. The manuscript should distinguish more consistently between evidence-supported findings and hypothesized benefits of the proposed model. Although the authors make this distinction in several places, maintaining this language consistently would prevent readers from interpreting the conceptual framework as an empirically validated intervention.
25. The conclusion is appropriately cautious, but it could more explicitly state the specific research questions or hypotheses that future empirical studies should test.
26. Overall, the manuscript presents a promising conceptual framework with a strong emphasis on human oversight, generalization, child choice, and safety. Before publication, the manuscript would benefit from strengthening the systematic literature-review methodology, technical specification of the AI system, operational definitions of safety and transfer, ethical/data-governance details, and empirical validation strategy.