

# How VR and AI could help the next generation grow kinder and more connected

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Unlike most games, it does not reward players with points or badges. Instead, children can progress in the game only by getting to know the characters, listening to their stories and practicing empathic actions. For example, they can look at the game's world through a character's glasses, revisit their memories or even hug Baba Yaga to comfort her. This design choice reflects a core idea of social-emotional learning: Empathy is not about external rewards but about pausing, reflecting and responding to the needs of others.

My colleagues and I have been refining the game since then and using it to study children and empathy.

## Different paths to empathy

We tested the game with elementary school children individually. After asking general questions and giving an empathy survey, we invited children to play the game. We observed their behavior while they were playing and discussed their experience afterward.

Our most important discovery was that children interacted with the VR characters following the main empathic patterns humans usually follow while interacting with each other. Some children displayed cognitive empathy, meaning they had an understanding of the characters' emotional states. They listened thoughtfully to characters, tapped their shoulders to get their attention, and attempted to help them. At the same time, they were not completely absorbed in the VR characters' feelings.

Others expressed emotional contagion, directly mirroring characters' emotions, sometimes becoming so distressed by fear or sadness that it made them stop the game. In addition, a few other children did not connect with the characters at all, focusing mainly on exploring the virtual environment. All three behaviors can happen in real life as well when children interact with their peers.

These findings highlight both the promise and the challenge. VR can indeed evoke powerful empathic responses, but it also raises questions about how to design experiences that support children with different temperaments – some need more stimulation, and others need gentler pacing.



Characters in the researchers' VR game express a range of emotions.

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## AI eye on emotions

The current big question for us is how to effectively incorporate this type of empathy game into everyday life. In classrooms, VR will not replace real conversations or traditional role-play, but it can enrich them. A teacher might use a short VR scenario to spark discussion, encouraging students to reflect on what they felt and how it connects to their real friendships. In this way, VR becomes a springboard for dialogue, not a stand-alone tool.

We are also exploring adaptive VR systems that respond to a child's emotional state in real time. A headset might detect if a child is anxious or scared – through facial expressions, heart rate or gaze – and adjust the experience by scaling down the characters' expressiveness or offering supportive prompts. Such a responsive “empathy classroom” could give children safe opportunities to gradually strengthen their emotional regulation skills.

This is where AI becomes essential. AI systems can make sense of the data collected by VR headsets such as eye gaze, facial expressions, heart rate or body movement and use it to adjust the experience in real time. For example, if a child looks anxious or avoids eye contact with a sad character, the AI could gently slow down the story, provide encouraging prompts or reduce the emotional intensity of the scene. On the other hand, if the child appears calm and engaged, the AI might introduce a more complex scenario to deepen their learning.

In our current research, we are investigating how AI can measure empathy itself – tracking moment-to-moment emotional responses during gameplay to provide educators with better insight into how empathy develops.

## **Future work and collaboration**

As promising as I believe this work is, it raises big questions. Should VR characters express emotions at full intensity, or should we tone them down for sensitive children? If children treat VR characters as real, how do we make sure those lessons carry to the playground or dinner table? And with headsets still costly, how do we ensure empathy technology doesn't widen digital divides?

These are not just research puzzles but ethical responsibilities. This vision requires collaboration among educators, researchers, designers, parents and children themselves. Computer scientists design the technology, psychologists ensure the experiences are emotionally healthy, teachers adapt them for curriculum, and children co-create the games to make them engaging and meaningful.

Together, we can shape technologies that not only entertain but also nurture empathy, emotional regulation and deeper connection in the next generation.

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