2. AI-Powered Toys- Science & Technology

The novel AI-powered toy "companions" are available on popular e-commerce platforms. Their makers claim the toys help educate children but experts warn that such toys could impact a child's healthy development

AI Toys- Meaning and Core Characteristics

AI toys are digitally enabled toys embedded with artificial intelligence systems that can interact with children through speech, images, or gestures. These toys typically require continuous internet connectivity to function, as their intelligence is often cloud-based.

Common form factors include-

1. Plush toys resembling animals or aliens
2. Interactive dolls
3. Humanoid or animal-shaped robots

Most AI toys contain embedded microphones, cameras, sensors, and speakers that-

1. Continuously listen to children's voices
2. Capture behavioural cues
3. Process emotional expressions to generate responses

Manufacturers market AI toys as-

1. Educational companions answering questions
2. Emotional support systems offering comfort
3. Guides for games, routines, and skill-building
4. Tools for language learning, problem-solving, and confidence-building through praise

Major Concerns Associated with AI Toys

Data Privacy Risks

AI toys collect highly sensitive personal data, including-

1. Voice recordings
2. Facial images
3. Emotional responses
4. Behavioural patterns and preferences

Children cannot provide informed consent, making them vulnerable to-

1. Data misuse by companies
2. Commercial data profiling
3. Long-term digital surveillance from an early age
4. Breaches or misuse can have irreversible consequences, as children's data is permanent and uniquely identifiable.

Cybersecurity Threats

Internet-connected toys can be-

1. Hacked by malicious actors
2. Remotely accessed through weak security protocols

Such breaches may expose children to-

1. Strangers impersonating the toy
2. Inappropriate language or content
3. Psychological manipulation or grooming risks

4. Several global incidents have shown toys functioning as unintended listening devices inside homes.

Psychological and Behavioural Impact

Excessive interaction with AI toys may lead to-

1. Emotional dependency on machines
2. Reduced peer-to-peer social interaction
3. Difficulty forming real-world human relationships

Children may-

1. Treat AI toys as authority figures
2. Prefer predictable machine responses over complex human emotions

This can negatively affect-

1. Empathy development
2. Communication skills
3. Emotional resilience

Bias and Inappropriate Responses

AI systems are trained on existing datasets that may contain-

1. Cultural bias
2. Gender stereotypes
3. Racial or socio-economic prejudices

As a result, AI toys may-

1. Reinforce harmful stereotypes
2. Provide inappropriate or misleading responses
3. Normalize biased worldviews at a formative age

Commercial Exploitation

Many AI toys operate on-

1. Subscription-based models
2. Paid upgrades for advanced features

Risks include-

1. Children becoming emotionally attached to toys that stop functioning when payments lapse
2. Emotional distress when access is withdrawn

This creates a form of emotional commodification, where affection and reassurance are monetised.

Lack of Parental Control and Transparency

Parents often lack-

1. Clear information on what data is collected
2. How long data is stored
3. Whether data is shared with third parties

User interfaces and privacy policies are often-

1. Complex
2. Non-child-centric
3. Not easily understandable for guardians

Regulatory and Ethical Gaps

Rapid innovation in AI toys has outpaced-

1. Child protection laws
2. Data governance frameworks
3. Ethical AI standards

Existing regulations struggle to address-

1. Always-on listening devices
2. Emotional manipulation by algorithms
3. Long-term impacts on child development

How Parents and Caretakers Should Treat AI Toys

Central Role of Human Interaction- Human interaction is developmentally irreplaceable.

Teachers, parents, and caregivers provide-

1. Emotional nuance
2. Moral reasoning
3. Social learning

AI toys should be viewed only as supplementary tools, not substitutes for caregiving.

Active Parental Engagement

Parents should-

1. Co-use AI toys with children
2. Monitor conversations and responses
3. Explain the difference between machines and humans

Guidance helps children understand-

1. Limits of AI intelligence
2. That toys do not possess real emotions or authority

Encouraging Non-AI Learning Experiences

Children should be guided towards-

1. Traditional toys that encourage creativity
2. Books and storytelling
3. Museum visits and nature exploration
4. Playdates and group activities
5. Family game nights
6. Imaginative play and art-based activities

These experiences foster-

1. Critical thinking
2. Empathy
3. Social skills
4. Emotional intelligence

Compliance Issues Under India's Digital Personal Data Protection (DPDP) Act, 2023

Protection of Children's Personal Data- The Act mandates verifiable parental consent before processing children's personal data.

Always-listening, voice-enabled AI toys make it-

1. Technically difficult to verify consent in real time
2. Hard to ensure consent is informed and continuous

Data Minimisation and Purpose Limitation

The Act requires data collection to be-

1. Limited to necessity
2. Used only for specified purposes

AI toys often collect-

1. Excessive behavioural and emotional data
2. Information not essential for core functionality

Restrictions on Profiling and Behavioural Tracking

The Act discourages-

1. Behavioural tracking of children
2. Targeted influence or manipulation

AI toys may enable-

1. Emotional profiling
2. Personality-based nudging
3. Subtle commercial or behavioural influence

Cross-Border Data Transfer Concerns

Many AI toys rely on- Cloud servers located outside India

This raises issues related to-

1. Data sovereignty
2. Jurisdictional enforcement
3. Accountability in case of breaches

Conclusion

AI toys represent a significant technological shift in childhood experiences, blending play with surveillance and algorithmic influence.

While they offer educational and interactive benefits, unchecked use poses serious risks to-

1. Privacy
2. Security
3. Psychological well-being
4. Ethical child development

A balanced approach involving-

1. Strong parental supervision
2. Robust regulation
3. Ethical-by-design AI systems is essential to ensure that technology supports, rather than undermines, children's growth and rights.

Source- https-//www.thehindu.com/sci-tech/technology/the-dark-side-of-ai-powered-toys-explained/article70573754.ece