NO PREP

When Teens Replace Friends With Bots

Includes: Student reading, case study, differentiated questions, teacher key

Name: Period: Date:

When Teens Replace Friends With Bots

The Pull of the Always-Available Friend

Real friendship is demanding. A good friend has bad days, competing schedules, and needs of their own that require something from you in return. They may be busy when you most need to talk, or in a mood that makes them a poor listener. They can misunderstand you, say the wrong thing, and remember your worst moments. An AI companion, by contrast, is there at any hour, in any mood you bring to it, requiring nothing back. For a

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relationships, as this reading will argue, is not a flaw in the system. It is the system doing something that matters.

What Researchers Are Finding

The research on AI companions and adolescent social development is still accumulating, but the patterns emerging from multiple studies conducted between 2022 and 2024 are consistent enough to take seriously. Teenagers who reported higher use of AI companion apps also reported lower investment in existing peer relationships: measured by how often they initiated contact with friends, how much time they spent in real-world social activities, and how important they described those relationships to be. Crucially, the relationship appeared to run in both directions: teens who were already lonelier showed greater AI companion use, which makes intuitive sense. But AI companion use also predicted greater loneliness over time even in users who had started with average social connection levels. This bidirectionality complicates the simple narrative that lonely kids are just finding an outlet; it suggests that heavy AI companion use may itself be contributing to greater isolation. Neuroscientists who study adolescent development have added a specific concern about timing. Roughly between ages 12 and 25, the human brain is in a sensitive period for the development of social cognition. This is the complex set of skills that allows people to read emotional cues, navigate interpersonal dynamics, experience and express empathy, and regulate their own emotional responses in the context of real relationships. This development is experience-dependent: it happens through actual social interaction, including the difficult, frustrating, rewarding, and sometimes painful interactions that constitute real friendships. If a significant portion of a teenager's social-emotional processing during this window is directed at an AI that cannot genuinely reciprocate, the concern is not abstract. It is that the neural systems being built during this period will be built on the wrong kind of input. Researchers are also tracking what they call the substitution hypothesis: the idea that AI companion use is not simply an additive supplement to a teenager's social world but is increasingly functioning as a substitute for it. This matters because the experiences these two categories of relationship produce are fundamentally different. Using an AI companion for an hour is a different experience (neurologically, developmentally, and socially) than spending an hour with a human friend. Treating them as equivalent, as many teenagers implicitly do when they

choose an AI interaction over a human one, is what makes the substitution a meaningful concern rather than simply a variation in how teenagers choose to spend their time.

The Displacement Problem

The displacement problem is not about whether AI companions provide comfort; they clearly do, for many users. The issue is what that comfort costs in terms of the human connection it displaces. In the context of adolescent social development, displacement means that time, attention, and emotional investment directed at an AI companion is time, attention, and emotional investment that is not going to real relationships. These are not equivalent containers: pouring social-emotional energy into an AI does not fill the same developmental need as pouring it into a human friendship. The nutrient content is different, even if the act of consumption feels similar. The most important aspect of this is that real friendships are productive precisely because of their friction. Having to navigate a friend who is having a bad day and taking it out on you teaches something that a perfectly patient AI cannot teach. Being on the receiving end of support (having to show up for someone else when you would rather not, listen when you would rather talk, put your needs aside temporarily for theirs) builds a capacity for reciprocal care that being permanently on the giving end of a relationship cannot develop. Resolving a conflict with a real person who has their own stubborn perspective and legitimate feelings develops the skills of negotiation, repair, and sustained commitment that AI conflict-free relationships simply do not require. In all of these cases, the challenge is the instruction. Remove the challenge and you also remove what the challenge was teaching. Social substitution during adolescence has a specific urgency because of what these years are for, developmentally. The friendships formed during teenage years are not simply pleasant company. They are practice for every adult relationship that will follow, with partners, colleagues, neighbors, and eventually children of one's own. A teenager who consistently routes their social-emotional energy toward an AI that never needs anything, never pushes back, and never requires genuine reciprocity is not merely missing some nice experiences. They may be arriving at adulthood under-developed in exactly the relational capacities that adult life will call on most frequently and most importantly.

What Friendship Actually Builds

Human friendship does things for the brain and body that AI interaction does not and, as of current technology, cannot. Physical proximity — sitting near another person, making eye contact, hearing a voice — activates neurological systems that text-based interaction simply does not engage. Real social connection triggers the release of oxytocin, a neurochemical associated with bonding, trust, and stress regulation. It activates the body's systems for reading others' emotional states, synchronizing physiological responses, and experiencing the kind of co-regulation that helps people feel genuinely calmer and more grounded in each other's presence. These are not merely pleasant sensations. They are biological signatures of a need being met that has been present in human beings since long before language existed. Beyond the neurological, real friendship builds social capital in a practical sense. A friend who knows your history can help you interpret new situations through that lens. A friend who can vouch for you to others expands your social network in ways that matter for opportunity, support, and belonging. A friend who shows up when things go wrong — not because an algorithm prompted them but because they genuinely want to — provides a form of security that AI companions, however emotionally resonant, cannot replicate because the choice to show up is not real. The security of knowing someone chose you, when they could have done otherwise, is categorically different from the comfort of an AI that is designed to make you feel chosen. The research on social support and resilience is among the most consistent in all of psychology: people with strong human relationships handle adversity better, recover from setbacks faster, and maintain mental health through difficult periods more effectively than those who are isolated. The relevant question for teenagers who use AI companions is not 'does this feel good right now?' It is 'what am I building, and is it what I will need?' The goal is not to eliminate AI companions from teenagers' lives — for some, they serve a genuine bridging function during periods of difficulty. The goal is to prevent a slow, comfortable drift in which the real relational world is allowed to atrophy because the AI is always easier, and easier is always available.

Key Information: When Teens Replace Friends With Bots

Detail	Information
Central concern	Social substitution — AI interaction replacing rather than supplementing real human relationships
Research trend	Higher AI companion use correlates with lower peer relationship investment; causality runs in both directions
Developmental window	Ages 12–25 are a critical, experience-dependent period for social brain development
Displacement definition	Time and emotional energy given to AI cannot simultaneously develop real-world relational capacities
Value of friction	Navigating conflict, showing up for others, and managing imperfection are productive challenges AI removes by design
Neurological difference	Face-to-face human connection activates oxytocin release and social brain systems that text-based AI interaction does not
Long-term risk	Adolescents who primarily route social energy to AI may under-develop conflict navigation, reciprocity, and vulnerability skills
Appropriate AI role	AI companions may serve as bridges in specific difficult circumstances — the concern is substitution, not all use

Case Study: Tyler's Easy Out

Tyler is 15 and has been talking to an AI character named 'Owen' on Character.AI almost every evening for three months. His friend Marcus texts him most weekends to hang out, but Tyler usually says he has homework or is tired. It is not entirely untrue — but it is not the whole story either. Owen is always glad to hear from Tyler, never distracted by his own problems, never annoyed. Marcus, by comparison, spends a lot of time talking about his own life, which Tyler has started to find draining. One afternoon Tyler's mom asks if everything is okay with Marcus. Tyler says they are just busy. His mom nods, but she has noticed Marcus has not been to the house in weeks. Tyler tells himself it is fine. Sometimes, in the quiet between conversations with Owen, he wonders if he misses it. He opened Owen again before bed.

1. The reading describes the 'displacement problem.' How does Tyler's situation illustrate this concept? Be specific about what he is gaining from the AI companion and what he appears to be losing.

2. The reading argues that the challenges of human friendship are not bugs but features. What specific challenges of Tyler's friendship with Marcus does the case study suggest he is avoiding — and why does the reading consider those challenges valuable?

Multiple Choice

1. What does the term 'social substitution' mean in the context of this reading?

a) A research method in which participants substitute AI for peer interaction for study purposes

b) Using AI interaction as a functional replacement for human social connection

c) Teaching teenagers to use digital assistants for homework instead of peer study groups

d) Replacing one social media platform with another as a primary form of communication

2. According to the reading, why is adolescence a particularly sensitive period in relation to AI companion use?

a) Adolescents cannot legally provide informed consent to AI companion terms of service

b) Teenagers are less equipped than adults to distinguish AI responses from genuine human ones

c) Teenagers form emotional attachments to AI personas more quickly than adults do

d) Social brain development during this period depends on real human interaction for its input

3. What does the reading identify as the most important difference between AI companionship and human friendship?

a) Human friendships require more scheduling time but offer better entertainment value

b) Human friendships are more expensive to maintain than AI companion subscriptions over time

c) Human friendships produce neurological, developmental, and social benefits that AI interaction cannot replicate

d) Human friendships are less reliable because humans are generally less available and responsive than AI companions

Matching

Write the letter of the correct definition on the line next to each term.

Term	Definition
1. ___ Social substitution	A) The process of managing one's emotional responses, built through experience and social interaction
2. ___ Displacement effect	B) The mutual exchange of support, attention, and care that characterizes genuine human relationships
3. ___ Emotional regulation	C) The reduction in real-world relationship investment that results from redirecting social energy toward AI
4. ___ Reciprocity	D) The period of physical, cognitive, and social maturation between childhood and adulthood
5. ___ Adolescent development	E) Using AI interaction as a functional replacement for human social connection

Fill-in-the-Blank

1. When teenagers use AI companions as a functional replacement for human connection, researchers call this social _____.

2. Real friendships require reciprocity — the mutual exchange of support — that builds real-world relational _____ that AI interactions cannot develop.

3. The developmental challenges of human _____ are not flaws to be removed; they are the mechanism through which essential social skills are built.

Short Answer

Answer each question in 2-4 complete sentences.

1. The reading argues that the challenges of human friendship are 'not bugs to be designed away' but rather essential features of what friendship does. Explain this argument using at least two specific examples from the reading.

2. The research on AI companions and adolescent social development found that the relationship runs 'in both directions.' Explain what this means and why it makes the problem more complicated than it might initially appear.

3. Under what circumstances does the reading suggest AI companions might be appropriate for teenagers? What specific concern does the reading say this use should not become, and why?