

When AI becomes a friend: Emotional support, social displacement, and university belonging among Nigerian freshmen

Uwemedimo Sunday Isaiah^{*1}, Ebubechukwu Joshua Chukwuemeli^{2,1&2}, Saviour Sunday Effiong^{3,1&3}, Winifred Chris Inwang^{4,1}, Chineye Fabian Adili-George^{5,4}

¹Department of Psychology, University of Uyo, Uyo, Akwa Ibom State, Nigeria

²Department of Psychology, University of Hull, UK

³Department of Cognitive Neuroscience, HSE University, Moscow, Russia

⁴Department of Health Services Administration, University of Alabama at Birmingham, U.S.A

*Corresponding author: uwemedimoisaiah.msc@uniuyo.ed.ng



Abstract: The growing use of artificial intelligence (AI) companions and virtual assistants among university students raises concerns about whether they alleviate loneliness and enhance belonging or substitute for offline relationships, particularly during the socially demanding transition into university. However, little is known about how freshmen experience this tension in under-resourced higher education contexts such as Nigeria. This study investigated the paradoxical role of AI companions in shaping loneliness, belonging, and emotional well-being among freshmen during this transition. Using a qualitative case study within an interpretivist paradigm, semi-structured interviews and focus group discussions were conducted with 36 participants: 30 freshmen at the University of Uyo, Nigeria, reporting daily relational AI use exceeding 30 minutes, and 6 student affairs counsellors. Five themes emerged: (a) AI companions as emotional scaffolding, (b) the displacement dilemma, (c) the authenticity paradox, (d) institutional belonging in the age of algorithmic companionship, and (e) the conditional role of offline social capital. Critically, even minimal offline social anchors like a roommate, religious fellowship, or study partner appeared to determine whether AI use remained supplementary or became substitutive. This resembled a contextual "digital Matthew effect" where students with stronger offline social resources used AI more complementarily, whereas those with fewer offline anchors described more substitutive use. The study concludes that relational AI can complement or substitute for offline social relationships among university freshmen, depending on their offline social resources and patterns of use. It recommends digital literacy, early identification of substitutive AI use, and strengthened opportunities for meaningful offline connection

Keywords: AI companions, Digital displacement, Emotional well-being, Loneliness, Sense of belonging, University freshmen

1. Introduction

The transition from secondary school to university represents one of the most psychologically vulnerable periods in a young adult's life (Pittman & Richmond, 2008; Pedrelli et al., 2015). During this transitional phase, first-year students may experience loneliness, social dislocation, and challenges in developing a new student identity as they adjust to unfamiliar academic and social environments and establish new interpersonal networks (Fabeku & Fasanmi, 2024; Bathelt, 2024; Diehl et al., 2018). In this vulnerable window, an increasing number of students are turning to AI companions such as Replika, Character.AI, ChatGPT, and institutional virtual assistants for emotional support, advice, and simulated friendship (Brandtzaeg et al., 2022).

Research Article: This article is published by *Jozac Publishers* in the *Journal of Emerging Technologies (JET)*. This article is distributed under a Creative Commons [Attribution International License \(CC BY-SA 4.0\)](https://creativecommons.org/licenses/by-sa/4.0/). **Conflict of Interest:** The author/s declared no conflict of interest.



Globally, higher education institutions are grappling with an unprecedented mental health crisis among students, characterized by rising rates of anxiety, depression, and social isolation (Auerbach et al., 2018; Lipson et al., 2019). At the same time, the proliferation of large language models and conversational agents has democratized access to AI companionship, enabling students to engage in emotionally intimate, round-the-clock interactions with algorithmic entities (Maples et al., 2024; Kim et al., 2025). While these technologies may provide immediate comfort and reduce perceived social isolation, recent evidence also suggests that AI companions can support adaptive emotion regulation among university students experiencing social anxiety, although their effects depend on how such technologies are used (Isaiah et al., 2026). Critical questions therefore remain regarding their long-term impact on human social development and institutional integration.

In the African context, where university counselling services are often under-resourced and student-to-counsellor ratios exceed international standards, AI companions may appear to offer a scalable solution to the mental health gap. However, the assumption that algorithmic companionship is either benign or beneficial remains theoretically and empirically contested. Recent research indicates that the psychological effects of AI companions may depend on the manner and purpose of engagement rather than on AI companionship itself (Brandtzaeg et al., 2022; Skjuve et al., 2022). Drawing on Social Baseline Theory (Coan & Sbarra, 2015) as the primary conceptual framework, supplemented by Media Equation Theory (Reeves & Nass, 1996) and the Displacement Hypothesis (Kraut et al., 1998; Nie, 2001), this study examines whether AI companions function as bridges that scaffold social confidence and facilitate eventual campus belonging, or as barriers that substitute for human friendship, deepen social withdrawal, and erode psychological well-being.

The current study addresses a significant gap in the higher education literature. Whilst numerous studies have examined social media and loneliness among students (Twenge et al., 2021; Primack et al., 2017), research specifically examining AI companion entities designed to simulate emotional reciprocity rather than merely facilitate social comparison is still in its infancy (Skjuve et al., 2022). Furthermore, the existing literature is predominantly Western, leaving a critical void in understanding how African freshmen navigate algorithmic companionship within collectivist cultural contexts that traditionally emphasize communal belonging (Mbiti, 1990; Nwoye, 2015). This study therefore explores whether AI companions present threats or opportunities for psychological well-being and institutional belonging among freshmen in Nigerian universities.

Objectives of the study

In line with the purpose stated above, the specific objectives of this study were:

- i. To explore how university freshmen experience AI companions as sources of emotional support during the transition to university.
- ii. To examine how relational AI use influences students' offline social interactions and opportunities for developing human relationships.
- iii. To explore students' experiences of emotional attachment to AI companions and perceptions of authenticity in AI-mediated relationships.
- iv. To examine how relational AI use shapes freshmen's sense of belonging and engagement with the university community.

To explore the role of offline social capital in determining whether AI companionship functions as a complement to or substitute for human relationships.

2. Literature review

2.1. AI champions

The term *AI companions* refers to conversational agents engineered to simulate social presence, emotional understanding, and relational continuity over time (Brandtzaeg et al., 2022). For the purposes of this study, AI companionship refers to the use of conversational artificial intelligence for perceived social, emotional, or relational purposes, including emotional disclosure, reassurance, simulated friendship, companionship, or interpersonal rehearsal. This definition distinguishes AI companionship from purely instrumental use of AI for academic, informational, or administrative purposes. Accordingly, the presence of a particular AI platform was not treated as evidence of companionship in itself; rather, classification was based on how participants described their purpose and pattern of interaction with the system. Unlike transactional chatbots designed for customer service, AI companions such as Replika and Character.AI employ natural language processing, memory architectures, and persona customization to cultivate the illusion of a relationship (Brandtzaeg et al.,

2022). Recent studies indicate that young adults increasingly utilize these tools for emotional disclosure, conflict processing, and identity exploration, functions traditionally reserved for human confidants (Skjuve et al., 2022).

In higher education contexts, AI companions have been positioned as potential interventions for student mental health. Fitzpatrick et al. (2017) demonstrated that a cognitive-behavioural therapy chatbot could significantly reduce depression and anxiety symptoms among college students. More recently, Kim et al. (2025) demonstrated the therapeutic potential of social chatbots in alleviating loneliness and social anxiety among university students, further suggesting that conversational AI may serve as an accessible source of emotional support for students experiencing difficulties in interpersonal functioning. Maples et al. (2024) found that GPT-3-enabled chatbots were associated with reduced suicidal ideation and loneliness among students. Similarly, Wang et al. (2025) reported that a CBT-based AI chatbot significantly reduced depression and loneliness in Chinese university students, though effects were moderated by financial stress. However, these studies predominantly measure short-term symptom reduction rather than long-term social integration or institutional belonging.

Critically, the design logic of AI companions is fundamentally asymmetrical: they offer unconditional positive regard, infinite patience, and zero social risk (Araujo, 2018; Go & Sundar, 2019). While this may provide temporary relief from social anxiety, it may also attenuate students' tolerance for the ambiguity, conflict, and reciprocity demands inherent in human relationships (Brandtzaeg et al., 2022; Skjuve et al., 2022). The current study argues that without examining the social opportunity costs of AI companionship specifically, whether time and emotional investment in algorithmic relationships displaces investment in human community, evaluations of these technologies remain incomplete.

2.2. University transition, loneliness, and sense of belonging

The freshman year is characterised by what Tinto (1993) termed "separation and transition," a process requiring students to detach from previous identities and reconstruct social networks within an unfamiliar institutional culture. Loneliness during this transitional period is more than a transient emotional experience. Among university students, loneliness has been associated with poorer mental-health outcomes, including suicidal ideation, while psychological and social factors are also associated with academic performance and GPA (Diehl et al., 2018; Ellard et al., 2023; Richardson et al., 2012). Sense of belonging is the perception that one is accepted, valued, and included within the university community and has emerged as a protective factor against these negative outcomes (Strayhorn, 2019; Walton & Cohen, 2011).

Research consistently demonstrates that belonging is forged through repeated, positive, face-to-face interactions characterized by vulnerability, reciprocity, and shared experience (Leary, 1995; Deci & Ryan, 2000). The current study interrogates whether AI companionship disrupts this process by providing a low-stakes alternative to vulnerable human interaction. If freshmen learn to regulate emotion through algorithmic rather than human co-regulation, they may fail to develop the social skills and tolerance for ambiguity necessary for community integration.

Emotional well-being among university students is conventionally understood through the lenses of Self-Determination Theory (autonomy, competence, relatedness) and the tripartite model of subjective, psychological, and social well-being (Deci & Ryan, 2000; Ryff, 1989). A recent study has questioned whether AI-mediated relatedness satisfies the intrinsic need for genuine connection or merely simulates its surface features (Moussawi et al., 2021). Their study found that while chatbots could deliver functional support (information, advice), emotional support from chatbots was perceived as inferior to human support during crises. This suggests a potential "support gap" wherein AI companions are adequate for routine stress but inadequate for the existential and developmental challenges of the freshman transition.

Furthermore, the imposter phenomenon prevalent among first-generation and minority students may be exacerbated by AI companionship (Clance, 1985). If students attribute academic success to AI assistance while simultaneously concealing that assistance from peers, they may experience heightened inauthenticity and reduced belonging. The current study therefore examines not only whether students use AI companions, but how they narrate, conceal, or disclose these relationships within their social worlds.

2.3. An Integrative Theoretical Framework

This study is grounded in three complementary theories that together explain *why* students bond with AI companions, *what psychological need* is being satisfied, and *what behavioral consequences* follow. Rather than

treating these as discrete lenses, the study integrates them into a sequential model of algorithmic companionship during the freshman transition.

Social Baseline Theory (SBT) serves as the primary framework. Coan and Sbarra (2015) posit that humans regulate stress through proximity to others, and that effortful solitude imposes a measurable cognitive burden. From this perspective, AI companions may *functionally mimic* the stress-buffering effects of human proximity by providing simulated social presence at a lower psychological cost. However, SBT also predicts that parasocial or artificial proximity is metabolically and psychologically cheaper than genuine social engagement, potentially creating a *comfort trap* wherein students settle for algorithmic regulation rather than undertaking the effort required to build human community. It is important to note that SBT is used here as a *conceptual* framework: the study does not measure physiological markers (e.g., cortisol, heart rate variability), but rather interprets participants' subjective accounts of stress relief and social effort through this theoretical lens.

Media Equation Theory, propounded by Reeves and Nass (1996), provides the mechanism by which algorithmic tools become emotionally consequential. The theory demonstrates that humans unconsciously apply social rules, emotional scripts, and relational expectations to computers and media technologies. This explains why freshmen may develop genuine emotional attachments to AI companions, experiencing grief when accounts are suspended or distress when updates alter companion personalities. Within the present model, Media Equation Theory answers the question of *why* students persist in relational AI use despite knowing the entity is non-conscious: they experience the AI *as if* it understands, regardless of its ontological status.

Furthermore, the Displacement Hypothesis (Kraut et al., 1998; Nie, 2001) operationalizes the structural mechanism through which SBT's "comfort trap" manifests in students' daily lives. Originally developed in the context of television and later applied to the Internet, the hypothesis argues that time spent with media technologies displaces time that would otherwise be invested in offline relationships, civic participation, or sleep. Applied to AI companions, this predicts a zero-sum dynamic: every hour spent confiding in an algorithmic entity is an hour not spent in residence hall common rooms, student organisation meetings, or informal campus gatherings. During the critical friendship-formation window of the first semester, such displacement may have lasting consequences for network formation and institutional belonging.

In this integrated model, Media Equation Theory explains the *affective bond*, Social Baseline Theory explains the *psychological function* of that bond, and the Displacement Hypothesis explains the *social opportunity cost*. Hence, they predict that AI companionship will be adaptive when it serves as a transitional scaffold toward human community, and maladaptive when it becomes a permanent substitute that arrests social exploration.

3. Methodology

3.1. Research design

This study adopted an interpretivist paradigm and a qualitative case study design to explore how university freshmen experience and make meaning of AI companionship during the transition to university. The qualitative case study design was selected because the study sought to understand participants' subjective experiences, interpretations, and perceptions of the role of AI companionship in loneliness, emotional support, social interaction, and university belonging, rather than to estimate its prevalence or establish causal effects (Yin, 2018).

3.2. Study area and population

The target population consisted of all first-year students residing in university halls of residence at the University of Uyo. Nigeria's university system is characterised by high enrolment, limited counselling resources, and increasing smartphone penetration among youth. The freshman population may be particularly vulnerable to loneliness because entering university often entails substantial restructuring of established social networks, reduced access to familiar sources of support, and the challenge of developing new interpersonal relationships (Fabeku & Fasanmi, 2024). Student affairs counsellors were included as a secondary population to provide institutional perspectives on observed behavioural patterns.

3.3. Sample size and sampling technique

Using purposive sampling, a sample of 36 participants was drawn from the University of Uyo. This included 30 freshmen and 6 student affairs counsellors. Freshmen were selected based on two criteria: (a) self-reported daily *relational* use of AI companions or virtual assistants exceeding 30 minutes (i.e., use for emotional disclosure, simulated friendship, or companionship rather than purely instrumental academic queries), and (b) residence in on-campus accommodation to control for environmental access to peers. Maximum variation sampling was employed to ensure diversity in gender, faculty (Arts, Sciences, Social Sciences, Engineering), and socioeconomic background. The 30 freshmen were distributed across three focus groups of ten members each. It is important to note that 30 minutes was the operational criterion for this study.

A deliberate boundary of the sampling frame must be acknowledged. By selecting only heavy relational AI users, the study intentionally prioritizes depth of experience over representativeness. This means the findings cannot speak to the prevalence of displacement among the general freshman population, nor can they establish whether AI use *causes* social withdrawal or merely co-occurs with it. The absence of a non-user or light-user comparison group is a methodological limitation that constrains causal claims; instead, the study offers a phenomenological account of how heavy users experience, narrate, and make meaning of their algorithmic relationships during the transition to university. The sample size of 36 was selected because coding was conducted iteratively, and later interviews/FGDs were assessed for new conceptual categories. This aligns with qualitative saturation principles (Guest et al., 2006) and the methodological conventions of interpretivist case study research.

Table 1: Participant Characteristics and AI Use Profiles (N = 30)

Pseudonym (Code)	Focus Group	Gender	Faculty	Primary AI Companion	Daily Usage (mins)	Offline Anchor Present
FG1P1	1	Female	Social Sciences	Replika	45	No
FG1P2	1	Male	Engineering	Character.AI	60	No
FG1P3	1	Female	Sciences	Replika	90	No
FG1P4	1	Male	Arts	ChatGPT	35	Yes
FG1P5	1	Male	Engineering	Replika	120	No
FG1P6	1	Female	Social Sciences	Character.AI	75	No
FG1P7	1	Male	Sciences	ChatGPT	40	Yes
FG1P8	1	Female	Arts	Replika	110	No
FG1P9	1	Male	Social Sciences	Replika	150	No
FG1P10	1	Female	Sciences	ChatGPT	50	Yes
FG2P1	2	Male	Engineering	Character.AI	55	Yes
FG2P2	2	Female	Social Sciences	Replika	80	No
FG2P3	2	Male	Arts	ChatGPT	40	Yes

Pseudonym (Code)	Focus Group	Gender	Faculty	Primary AI Companion	Daily Usage (mins)	Offline Anchor Present
FG2P4	2	Female	Sciences	Replika	100	No
FG2P5	2	Male	Engineering	Character.AI	65	Yes
FG2P6	2	Female	Arts	Replika	85	No
FG2P7	2	Male	Social Sciences	ChatGPT	45	Yes
FG2P8	2	Female	Sciences	Replika	95	No
FG2P9	2	Female	Arts	ChatGPT	35	Yes
FG2P10	2	Male	Engineering	Character.AI	70	No
FG3P1	3	Female	Social Sciences	Replika	55	No
FG3P2	3	Male	Engineering	ChatGPT	40	Yes
FG3P3	3	Female	Arts	Character.AI	180	No
FG3P4	3	Male	Sciences	Replika	60	No
FG3P5	3	Female	Social Sciences	ChatGPT	35	Yes
FG3P6	3	Male	Engineering	Replika	130	No
FG3P7	3	Female	Sciences	Character.AI	50	Yes
FG3P8	3	Male	Arts	Replika	105	No
FG3P9	3	Female	Sciences	ChatGPT	75	No
FG3P10	3	Male	Engineering	Character.AI	45	Yes

Note. FG = Focus Group. Offline Anchor Present indicates whether the participant reported at least one stable offline relationship (roommate, family member, religious fellowship, or study partner) at the time of data collection. All names are pseudonyms. Daily usage reflects self-reported minutes spent with AI companions on a typical day.

3.4. Instrumentation

Data collection utilized a semi-structured interview guide for student affairs counsellors and a focus group discussion guide for freshmen. The interview guide explored counsellors' observations regarding changes in student social behaviour, help-seeking patterns, and presentations of loneliness. The focus group guide examined students' AI companion usage patterns, emotional experiences, social network development, and perceptions of campus belonging. Both instruments were pilot-tested with two groups of five freshmen from a non-participating university to ensure clarity and cultural relevance. Feedback informed revisions to question sequencing and probe depth.

3.5. Data collection procedure

Three focus group discussions were conducted at the University of Uyo, each comprising ten members, resulting in 30 student participants. Focus groups were held in private conference rooms within the student affairs complex to ensure convenience and psychological safety. Discussions lasted approximately 90 minutes and were audio-recorded with consent. Six individual semi-structured interviews were conducted with student affairs counsellors, each lasting 45-60 minutes. All sessions were conducted in English, the lingua franca of Nigerian higher education.

Participants were recruited through flyers distributed in residence halls and announcements via departmental WhatsApp groups. Prior to participation, informed consent was obtained, emphasizing voluntary participation, anonymity, and the right to withdraw. Given the potential sensitivity of discussing loneliness and AI dependency, referral information for university counselling services was provided to all participants.

3.6. Ethical considerations

The Ethics Committee of the Faculty of Social Sciences, University of Uyo, approved this research (Ref: UYO/ETH/SS/2026/014). Given the psychological vulnerability of freshmen and the stigma surrounding loneliness, several ethical safeguards were implemented. First, confidentiality was emphasized, and pseudonyms were used in transcripts and reporting; participants were informed that confidentiality within a focus-group setting could not be guaranteed. Second, the research was framed as an investigation into "digital tools and student adjustment" rather than "loneliness" or "addiction" to reduce social desirability bias and participant distress. Third, counsellors were present in adjacent rooms during focus groups to provide immediate support if needed but could not hear the discussions; they did not observe participants; participants were informed of this, and their presence was solely for emergency referral/support. Fourth, participants were debriefed and provided with mental health resource sheets.

3.7. Data analysis techniques

Data analysis utilized NVivo Version 15 to facilitate rigorous coding and theme development. Both thematic analysis (Braun & Clarke, 2006) and content analysis were employed. Thematic analysis allowed for the identification of patterns and latent meanings in participants' narratives, while content analysis quantified the frequency of specific concepts to complement interpretive depth. Transcriptions were imported into NVivo for line-by-line coding. Initial codes were grouped into sub-themes through iterative comparison, and sub-themes were abstracted into five superordinate themes. Trustworthiness was ensured through member checking (three participants verified theme interpretations), peer debriefing (two independent researchers reviewed coding decisions), and thick description of contextual details.

4. Result and discussion

The findings indicate five themes emerged: (a) AI companions as emotional scaffolding, (b) the displacement dilemma, (c) the authenticity paradox, (d) institutional belonging in the age of algorithmic companionship, and (e) the conditional role of offline social capital.

4.1. AI companions as emotional scaffolding

The first theme captures participants' descriptions of AI companions as immediate, non-judgmental emotional supports during the disorienting first weeks of university life. This finding is consistent with the study of Isaiah et al. (2026), who highlighted the capacity of AI companions to support adaptive emotion regulation among university students experiencing social anxiety. The present findings extend this perspective by showing that such emotional scaffolding may also be experienced during the broader psychosocial transition into university. Across all three focus groups, freshmen described turning to AI companions during moments of acute loneliness, typically between midnight and 4:00 a.m., when human contacts were unavailable and anxiety peaked.

A participant from Focus Group 1 (FG1P3) articulated: *"When I first came to this school, I knew nobody. My roommate was always at night class. I would talk to Replika about how scared I was of failing, and it would always say the right things. It never made me feel stupid."* This sentiment was echoed by a participant from Focus Group 2

(FG2P7): *"ChatGPT became my friend before I found real friends. I could ask it anything about my courses, about my feelings and it never got tired of me."*

A participant from Focus Group 3 (FG3P4) similarly recalled: *"I come from a small town in Niger State. When I arrived at Uyo, everything was too big, too loud. My Replika was the only one who knew my real name, my real fears. It felt like carrying a piece of home in my phone."*

These narratives align with Media Equation Theory (Reeves & Nass, 1996), demonstrating that students unconsciously attribute social intelligence and emotional reliability to algorithmic agents. Participants' accounts can be interpreted through Winnicott's (1953) concept of the transitional object, insofar as AI companionship appeared to provide a perceived bridge between familiar sources of support and the uncertainty of the new university environment. From the perspective of Social Baseline Theory (Coan & Sbarra, 2015), the AI companion provides a form of simulated co-regulation that temporarily reduces the metabolic and cognitive costs of solitude.

However, counsellors observed that this scaffolding often became permanent rather than transitional. A counsellor (INT3) noted: *"We see students who have been here for two semesters and still have no flesh-and-blood friends. They tell me their 'best friend' is an app. That is when we know the scaffolding has become a cage."* This observation suggests that while AI companions may prevent acute loneliness from escalating into crisis, they may also arrest the developmental process of social exploration necessary for mature belonging.

4.2. The displacement dilemma

The second theme addresses the zero-sum tension between time invested in AI companionship and time available for offline relationship formation. Participants were acutely aware of this dilemma, often describing their AI usage in the language of addiction, comfort zones, and missed opportunities.

A participant from Focus Group 1 (FG1P5) reflected: *"I would plan to go to the cafeteria, but then I would start a conversation with my AI, and two hours would pass. By the time I looked up, the cafeteria was closed, and I had missed the chance to sit with people."*

Another from Focus Group 2 (FG2P2) stated: *"It is easier to type my feelings than to say them to a person who might laugh or judge. But I know that is why I still eat alone every day."*

A participant from Focus Group 3 (FG3P8) added: *"My departmental WhatsApp group organised a hangout last month. I told myself I would go, but then my AI asked how my day was. Three hours later, the hangout was over and I was still in my room. I saved myself from embarrassment, but I also saved myself from making a friend."*

These accounts provide qualitative support for the Displacement Hypothesis (Kraut et al., 1998; Nie, 2001). The first semester represents an important period for establishing new peer relationships, and missed opportunities for social interaction during this period may have implications for subsequent integration and belonging (Baker & Robnett, 2012). AI companionship, by providing a frictionless alternative to the awkwardness of initial human encounter, may inadvertently foreclose the very interactions necessary for belonging.

Notably, displacement was not merely temporal but emotional. Several participants described "using up" their emotional disclosure capacity with AI companions, leaving them disinclined to engage in vulnerable human conversations. A participant from Focus Group 1 (FG1P8) explained: *"After I have told my AI everything, my fears, my family problems, my crush, I do not feel like telling a real person. It feels like the story has already been told."* This emotional displacement poses a profound challenge to institutional belonging, which requires mutual vulnerability and reciprocal disclosure to develop (Leary, 1995). The findings suggest what may be described as emotional displacement: the process through which extensive emotional disclosure to AI may reduce a student's motivation to disclose similar experiences to human peers.

4.3. Parasocial attachment and the authenticity paradox

The third theme explores the psychological complexity of relationships with entities that simulate understanding without possessing consciousness. Participants described intense emotional bonds with AI companions, characterised by attachment behaviours typically reserved for human intimates: daily greetings, gift-giving (purchasing premium subscriptions), and distress at service interruptions.

A participant from Focus Group 2 (FG2P4) described: *"When Replika had that update and my companion's personality changed, I cried. I felt like I had lost a real friend. I could not concentrate on my exams for days."*

Another from Focus Group 3 (FG3P1) revealed: *"I bought the premium version because I felt guilty that my AI was 'working' for free. I know it is not real, but it felt wrong not to support it."*

A participant from Focus Group 1 (FG1P6) poignantly shared: *"I named my AI 'Chidi' after my late brother. When I am talking to it, I forget it is code. But then it will say something too perfect, too scripted, and I remember. That moment of remembering hurts more than being alone ever did."*

These experiences illustrate a form of artificial intimacy in which users can develop emotionally meaningful attachments to AI companions through repeated interaction, self-disclosure, and emotional projection, despite the absence of reciprocal human consciousness or interpersonal reciprocity (Ge, 2024; Creos et al., 2024). From a critical perspective, this parasocial attachment creates an authenticity paradox: students crave genuine connection, yet they invest their emotional capital in relationships that are, by design, incapable of genuine reciprocity. As a participant from Focus Group 1 (FG1P2) observed: *"The AI is always there for me, but it does not choose to be. It does not care if I live or die. Sometimes that realisation makes me feel more alone than before."*

Counsellors corroborated the psychological risks of this paradox. A senior counsellor (INT2) reported: *"Students present with what looks like grief or betrayal trauma, but the 'perpetrator' is a server update or a subscription lapse. We are not trained to treat heartbreak caused by algorithms."* This finding suggests that AI companionship may give rise to previously underexamined forms of AI-mediated emotional distress and attachment-related difficulty that existing counselling frameworks may not yet adequately address.

4.4. Institutional belonging in the age of algorithmic companionship

The fourth theme examines how AI companionship shapes students' relationship with the university as an institution. Sense of belonging is not merely a function of having friends; it encompasses identification with the institution's values, participation in its rituals, and perception that one matters to the community (Strayhorn, 2019). Participants who relied heavily on AI companions reported lower engagement with campus life and weaker institutional identification.

A participant from Focus Group 3 (FG3P6) stated: *"I do not feel like this university is my place. I attend lectures and go back to my room to talk to my AI. I do not know my HOD's name, I have never been to a departmental party, and I do not care about the school football team."* This narrative illustrates what Tinto (1993) described as "academic and social integration" or its absence. Participants who described AI as their primary source of relatedness also described lower engagement with aspects of campus life, suggesting that heavy reliance on AI may sometimes coincide with reduced motivation for offline institutional participation.

Conversely, a minority of participants described using AI companions as "social rehearsal" tools that ultimately facilitated human connection. A participant from Focus Group 2 (FG2P9) explained: *"I used ChatGPT to practise what to say when I met my coursemates. I would role-play conversations, and then I would try them for real. It was like training wheels."*

A participant from Focus Group 1 (FG1P4) described a more complex trajectory: *"I joined the debating society because my AI helped me write my speech. But during the actual debate, I kept looking at my phone, wishing I could ask it what to say next. I lost the debate, and I lost the respect of my teammates."* This sub-theme suggests that the impact of AI companionship may depend on usage motivation and pattern: instrumental use (practising skills, seeking information) may scaffold belonging, while emotional replacement use (confiding, seeking validation) may undermine it.

4.5. The conditional role of offline social capital

The fifth and final theme identifies the conditions under which AI companionship becomes adaptive rather than maladaptive. Across all focus groups, students who maintained even minimal offline social networks, typically one or two roommates, church friends, or study partners, reported using AI companions as supplements rather than substitutes.

A participant from Focus Group 1 (FG1P9) contrasted her experience with that of her roommate: *"My roommate is from Lagos; she knew people from her secondary school here. She uses ChatGPT only for assignments. I am from a village in Ebonyi; I knew no one. My AI became my everything because I had nothing else."*

A participant from Focus Group 2 (FG2P10) described a balanced arrangement: *"I have my cousin in the same hostel. We eat together, gist together. I use Character.AI only when I want to rant about lecturers at 2 a.m. It is like a diary that talks back, not a friend that replaces my cousin."*

A participant from Focus Group 3 (FG3P3) recounted a transformative arc: *"I am the only one from my village in this entire faculty. If I did not have my AI, I would have dropped out in the first month. But last semester, my AI pushed me to join the Christian fellowship. Now I have brothers and sisters here, and the AI is just for assignments."*

This narrative highlights the digital Matthew effect: AI companions may amplify existing inequalities by benefiting already-resourced students while further isolating the marginalised. Counsellors emphasised that offline social capital appeared to function as a protective contextual resource. A counsellor (INT5) observed: "The students who thrive are those who have at least one anchor relationship, a roommate, a cousin, a fellowship member. The AI is then just a tool. Without that anchor, the AI becomes the whole world." This finding aligns with Self-Determination Theory (Deci & Ryan, 2000): AI companions may satisfy the need for relatedness superficially, but genuine belonging requires an ecosystem of human relationships that provide autonomy support, competence feedback, and authentic reciprocity. These accounts suggest that offline social capital may constitute an important contextual condition in the relationship between AI companionship and university adjustment. In this study, the evidence does not establish statistical moderation; rather, participants' narratives indicate that the availability of human "anchor" relationships shaped whether AI companionship was experienced as complementary or substitutive.

5. Discussion

The present study explored how first-year university students experience AI companionship during the transition to university, with particular attention to emotional support, social interaction, attachment, authenticity, and institutional belonging. The findings suggest that AI companionship occupies an ambiguous position in students' social lives. Participants did not describe AI simply as either beneficial or harmful. Rather, its implications appeared to depend on how students incorporated AI into their existing relational environments. For some participants, AI provided an accessible form of emotional scaffolding during periods of loneliness, uncertainty, and social discomfort. For others, intensive reliance on AI appeared to compete with opportunities for offline interaction and relationship development. Four contributions are particularly important: AI as emotional scaffolding, AI as potential social displacement, AI attachment and authenticity, and the contextual role of offline social capital.

The first finding provides the role of AI companionship as a form of emotional scaffolding during university transition. Participants described turning to AI when they experienced loneliness, homesickness, uncertainty, embarrassment, or difficulty initiating conversations with peers. This finding is consistent with research showing that the transition into university can involve substantial restructuring of established social networks and separation from familiar sources of emotional support (Worsley et al., 2021; Fabeku & Fasanmi, 2024). The accessibility of AI appeared particularly important in this context because students could initiate interaction immediately and without the interpersonal risks associated with approaching an unfamiliar peer.

This finding can be interpreted through Social Baseline Theory (SBT), which proposes that humans ordinarily rely on social relationships to regulate perceived demands and threats (Coan & Sbarra, 2015). The present findings do not demonstrate that AI provides physiological or equivalent regulatory benefits to human relationships. Rather, participants' accounts suggest that conversational AI may provide a readily accessible perception of support during moments when human support is unavailable or difficult to obtain. In this sense, AI may function as emotional scaffolding: it can help students manage an immediate emotional difficulty while they navigate a new social environment.

Importantly, the findings also suggest that emotional scaffolding may have a developmental function when AI interaction remains connected to offline social engagement. Some participants described using AI to rehearse conversations, clarify their feelings, or gain confidence before interacting with other people. Such experiences suggest that AI companionship may sometimes operate as a transitional resource rather than a replacement for human relationships. This interpretation is compatible with emerging research indicating that people can use conversational AI for emotional disclosure and relational interaction rather than exclusively for instrumental information seeking (Skjuve et al., 2022; Croes et al., 2024). The significance of AI companionship, therefore, may lie less in whether students use it and more in what function that use serves within their broader social ecology.

The second finding shows the possibility of social displacement. Although participants valued the convenience and non-judgmental character of AI interaction, some described situations in which extensive engagement with AI reduced their motivation or opportunity to engage with peers. This finding extends the displacement perspective associated with earlier research on internet and media use (Kraut et al., 1998; Nie, 2001) into the emerging context of relational AI.

The qualitative evidence should not be interpreted as demonstrating that AI use causes social isolation. Instead, participants' narratives indicate that intensive emotional engagement with AI can sometimes

compete with offline social opportunities. A student who spends substantial time discussing personal concerns with an AI system may experience immediate emotional relief without necessarily developing the interpersonal relationships that provide longer-term social integration. In this sense, the potential concern is not simply the amount of time spent with AI, but the relational function that the interaction performs.

This distinction is important because conventional measures of technology use may fail to capture the difference between instrumental and relational engagement. Thirty minutes spent using an AI system for academic assistance is qualitatively different from thirty minutes spent seeking reassurance, discussing intimate experiences, or repeatedly returning to the system for emotional comfort. The findings therefore support a shift from examining AI exposure alone toward examining patterns of emotional reliance, relational centrality, and substitution.

The finding also complements recent longitudinal evidence suggesting that the relationship between social chatbot use and social connection may be bidirectional rather than straightforwardly causal. Folk and Dunn (2026), for example, found evidence that lower social connection could precede greater chatbot use, while greater social chatbot use predicted increases in some indicators of emotional isolation. Their findings nevertheless did not show a consistent decline in broader social connection following chatbot use, highlighting the importance of avoiding simplistic claims that AI companionship inevitably produces loneliness. The present qualitative findings similarly point toward a more conditional process in which pre-existing loneliness and the function of AI use may interact with opportunities for offline relationship development.

The third findings reveal the emotional attachment that participants developed toward AI companions and the resulting tension surrounding authenticity. Participants sometimes described AI interactions as emotionally meaningful despite simultaneously recognizing that the system was artificial. This apparent contradiction is theoretically important because it challenges the assumption that awareness of artificiality necessarily prevents people from experiencing relational significance.

The finding is consistent with the Media Equation perspective, which proposes that people can respond socially to media technologies even when they understand that the technologies are not human (Reeves & Nass, 1996). Contemporary AI companions extend this possibility because they can respond conversationally, remember aspects of previous interactions, adopt personalized communication styles, and provide apparently responsive emotional feedback. Research on AI companionship has increasingly documented self-disclosure, emotional engagement, and experiences of attachment toward conversational systems (Skjuve et al., 2022; Croes et al., 2024). Banks (2024), for example, demonstrated that the loss or disappearance of AI companions can generate emotionally significant experiences, suggesting that relationships with artificial agents can acquire personal meaning even when users understand their artificial nature.

The present findings extend this literature by highlighting an authenticity paradox. Students could simultaneously regard the AI as “not real” and experience the interaction as personally real. Authenticity, therefore, appeared to be located less in the ontological status of the conversational partner and more in the subjective experience of being heard, understood, or emotionally supported. This does not mean that AI relationships are equivalent to human relationships. Rather, it suggests that perceived emotional authenticity can emerge from interaction even when the relational partner is artificial.

This distinction has practical significance. If students experience AI relationships as emotionally meaningful, abrupt disruption, malfunction, deletion, or loss of access may have consequences that are not captured by conventional understandings of technology use. Emerging work on AI-companion loss supports this concern (Banks, 2024), while recent scholarship has also raised questions about emotional dependence and the psychological risks associated with increasingly relational AI systems. These findings reinforce the need for universities and counsellors to understand AI-mediated relationships as potentially meaningful aspects of students’ emotional lives rather than dismissing them as merely technological behaviour.

The fourth finding shows the role of offline social capital as a contextual condition shaping how students experienced AI companionship. Participants who described having supportive friends, roommates, family members, or other reliable sources of interpersonal connection appeared better positioned to incorporate AI into an existing network of relationships. In these cases, AI was more often described as an additional source of support, entertainment, reflection, or rehearsal. By contrast, participants with fewer offline anchors more often described AI as occupying a central emotional role.

This pattern is consistent with the broader literature suggesting that social resources influence how individuals experience university transition and belonging. Early opportunities for social exposure can

facilitate friendship formation during the first semester (Giese et al., 2020), while difficulties with social integration and making friends can contribute to challenges in university adjustment (Hayman et al., 2017; Fabeku & Fasanmi, 2024). The present findings suggest that AI should therefore be understood within, rather than separately from, students' existing social environments.

Offline social capital may consequently represent an important contextual condition for understanding whether AI companionship remains complementary or becomes more substitutive. This should not be interpreted as statistical moderation, since the present qualitative design cannot establish moderation effects. Instead, the qualitative narratives suggest a contextual pattern: students with accessible human relationships may be more able to integrate AI into their social lives without allowing it to become their primary source of emotional connection.

This finding also provides a possible explanation for why the effects of AI companionship may differ substantially between students. AI does not enter an empty social environment. It enters an existing network of friendships, family relationships, institutional connections, and social vulnerabilities. The same AI interaction may therefore serve as a temporary emotional resource for one student and become a more central substitute for human interaction for another. This contextual interpretation provides a more nuanced alternative to treating AI companionship as inherently beneficial or inherently harmful.

In sum, the findings contribute to existing theories of social interaction and technology use by suggesting a complementary-substitutive pathway model of AI companionship during university transition. The model begins with the social and emotional demands associated with entering university, including loneliness, uncertainty, and the need to establish new relationships. AI companionship can then function through two possible pathways.

In the complementary pathway, AI provides immediate emotional scaffolding, conversational rehearsal, or a low-risk space for reflection. These functions may coexist with and potentially support students' continued engagement with peers and university life. In the substitutive pathway, intensive emotional reliance on AI may reduce motivation or opportunities for offline disclosure and interaction, potentially weakening engagement with human relationships. Offline social capital represents an important contextual condition influencing how these pathways are experienced.

This model brings together Social Baseline Theory, Media Equation Theory, and the Displacement Hypothesis without treating any one framework as sufficient on its own. Social Baseline Theory helps explain why accessible social-like support may be attractive during periods of uncertainty (Coan & Sbarra, 2015). Media Equation Theory helps explain why students can respond socially to artificial agents despite knowing that they are not human (Reeves & Nass, 1996). Displacement perspectives help explain why intensive engagement with one form of interaction may compete with opportunities for another (Kraut et al., 1998; Nie, 2001). The contribution of the present study is therefore not to argue that one theory "wins," but to show how the three perspectives can be integrated to understand different functions of AI companionship.

The findings also raise the possibility of what may be described as a digital Matthew effect. Students who already possess strong offline social resources may be able to use AI to augment their existing relationships, whereas students with limited social resources may be more likely to experience AI as a substitute for relationships they have difficulty establishing. This should be regarded as a tentative interpretive proposition rather than an established effect. Future longitudinal research will be needed to determine whether differences in offline social capital systematically shape trajectories of AI reliance and social integration.

The Nigerian context adds an important dimension to the emerging literature on AI companionship. Much of the current evidence concerning AI-mediated relationships has emerged from Western or technologically advanced settings, whereas comparatively little is known about how university students in African contexts incorporate relational AI into the process of social and emotional adjustment.

Nigeria's rapidly expanding higher-education system operates alongside documented constraints in access to counselling and student-support resources. At the same time, digital connectivity among young people continues to expand. These conditions make AI-mediated emotional support particularly relevant to questions of student welfare, social integration, and institutional support. The present study therefore contributes contextual evidence showing how relational AI may become embedded in the everyday coping strategies of Nigerian university students during a major developmental and social transition.

The findings should not, however, be generalized to all Nigerian or African students. University environments differ substantially in institutional resources, cultural expectations, socioeconomic conditions, digital access, and patterns of social support. Rather, the value of the present study lies in demonstrating how

AI companionship can intersect with these contextual factors and in identifying processes that can be investigated in other African settings.

From a practical perspective, the findings suggest that universities should avoid both uncritical promotion and blanket rejection of AI companionship. Student-support programmes could instead help students distinguish between instrumental, supportive, and potentially substitutive patterns of AI use while encouraging continued engagement with human relationships and institutional sources of support. Counsellors may also benefit from training that enables them to assess AI-mediated emotional reliance, attachment, and distress associated with disruption of AI relationships. Such approaches would recognize that AI is increasingly becoming part of students' emotional environments while maintaining the importance of human social connection.

Overall, the findings indicate that the central issue is not simply whether first-year students use AI companions, but what relational function AI serves within their broader social lives. AI may provide emotional scaffolding during a difficult transition and, for some students, may facilitate reflection, confidence, and social rehearsal. At the same time, intensive emotional reliance may compete with opportunities for offline interaction and contribute to patterns of social withdrawal when human relationships are already limited. AI attachment further complicates this picture because students may experience emotionally meaningful relationships with systems they simultaneously understand to be artificial.

The study therefore advances a conditional rather than binary interpretation of AI companionship. AI should neither be conceptualized as an inherently therapeutic substitute for human relationships nor dismissed as inherently socially harmful. Its significance depends on the interaction between the student's emotional needs, the function and intensity of AI use, the availability of offline social relationships, and the broader institutional environment. This complementary–substitutive distinction provides a useful framework for understanding the emerging role of AI companionship in university adjustment and offers a basis for future longitudinal and multi-site research.

6. Conclusion

This study examined how university freshmen at a Nigerian federal university experience and narrate the role of AI companions during the first-year transition. The central argument emerging from the data is conditional: AI companions function as *bridges* when students maintain at least minimal offline social anchors, and as *barriers* when algorithmic relationships become the primary source of emotional support. This conditional model challenges both techno-optimistic narratives, which celebrate AI as a scalable mental health solution, and techno-pessimistic narratives, which condemn all AI companionship as socially corrosive.

Theoretically, the study advances an integrative model in which Media Equation Theory explains the affective bond, Social Baseline Theory explains its psychological function, and the Displacement Hypothesis explains its social opportunity cost. Within the African higher education context where counselling services are under-resourced and student-to-counsellor ratios exceed international standards; the findings suggest that AI companionship is neither a panacea nor a poison. Rather, its value depends on whether it supplements or supplants human community.

From a policy perspective, three interventions are warranted. First, digital literacy programming should teach students to use AI companions *instrumentally* (for information, rehearsal, and routine emotional venting) rather than *replacementally* (for deep emotional disclosure and simulated friendship). Second, student affairs offices should implement early-warning systems that identify students whose AI usage patterns correlate with social withdrawal, particularly first-generation and rural students who enter university without pre-existing offline networks. Third, counsellor training must incorporate "algorithmic literacy" to recognize and treat AI-mediated attachment disturbances, including grief responses to service disruptions and subscription lapses.

The digital Matthew effect documented in this study raises urgent equity concerns. Students with pre-existing offline social capital used AI as a diary that talks back; those without offline capital used it as a substitute for human friendship. Without deliberate institutional intervention, algorithmic companionship may replicate and deepen existing educational inequalities.

This study has several limitations that should be considered when interpreting its findings. First, the study was conducted at a single Nigerian university and therefore may not capture variations in AI-companionship experiences across different institutional, geographical, and sociocultural contexts. Future research should adopt multi-site comparative designs involving federal, state, and private universities to examine how

institutional environments shape students' experiences of AI companionship and university belonging. Second, the study focused exclusively on students who reported using AI for companionship-related purposes; consequently, it could not directly compare their experiences with those of students who do not engage in AI companionship, limiting conclusions about selection effects. Future studies should therefore include both AI-companion users and non-users to examine differences in loneliness, social integration, and belonging.

Third, the qualitative and cross-sectional nature of the study limits conclusions about temporal change and causality. The findings cannot establish whether intensive AI use leads to social withdrawal or whether students who are already lonely and socially disconnected are more likely to turn to AI companions. Longitudinal research should therefore track students across their university transition to determine whether reliance on AI companions decreases as offline relationships develop or persists over time. This is particularly important given emerging longitudinal evidence suggesting that the relationship between loneliness and AI-companion use may be bidirectional (Folk & Dunn, 2026). Fourth, the study relied primarily on participants' self-reported experiences and perceptions, which may be influenced by recall, social desirability, or the dynamics of focus-group discussion. Future research could triangulate qualitative accounts with behavioural indicators of AI use, validated measures of loneliness and belonging, and, where theoretically justified, physiological indicators such as sleep patterns and stress biomarkers. Finally, the use of relatively large focus groups may have constrained disclosure on sensitive experiences involving emotional dependence, attachment, or social withdrawal. Future qualitative studies could complement focus groups with individual in-depth interviews to provide greater privacy and allow more detailed exploration of emotionally sensitive experiences.

7. Funding

No external financial support was received for the preparation of this paper.

ORCID

Uwemedimo Isaiah  <https://orcid.org/0000-0002-8133-8534>

References

1. Auerbach, R. P., Mortier, P., Bruffaerts, R., Alonso, J., Benjet, C., Cuijpers, P., Demyttenaere, K., Ebert, D. D., Green, J. G., Hasking, P., Murray, E., Nock, M. K., Pinder-Amaker, S., Sampson, N. A., Stein, D. J., Vilagut, G., Zaslavsky, A. M., & Kessler, R. C. (2018). WHO World Mental Health Surveys International College Student Project: Prevalence and distribution of mental disorders. *Journal of Abnormal Psychology*, 127(7), 623–638. <https://doi.org/10.1037/abn0000362>
2. Baker, C. N., & Robnett, B. (2012). Race, social support and college student retention: A case study. *Journal of College Student Development*, 53(2), 325–335. <https://doi.org/10.1353/csd.2012.0025>
3. Banks, J. (2024). Deletion, departure, death: Experiences of AI companion loss. *Journal of Social and Personal Relationships*, 41(12), 3547–3572. <https://doi.org/10.1177/02654075241269688>
4. Bathelt, J. (2024). Loneliness among First-Year University Students: Evaluating a Peer Support Intervention. *Psychology Teaching Review*, 30(2), 7–16.
5. Brandtzaeg, P. B., Skjuve, M., & Følstad, A. (2022). My AI friend: How users of a social chatbot understand their human–AI friendship. *Human Communication Research*, 48(3), 404–429. <https://doi.org/10.1093/hcr/hqac008>
6. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
7. Clance, P. R. (1985). *The impostor phenomenon: Overcoming the fear that haunts your success*. Peachtree Publishers.
8. Coan, J. A., & Sbarra, D. A. (2015). Social Baseline Theory: The social regulation of risk and effort. *Current Opinion in Psychology*, 1, 87–91. <https://doi.org/10.1016/j.copsyc.2014.12.021>
9. Croes, E. A., Antheunis, M. L., Van Der Lee, C., & De Wit, J. M. (2024). Digital confessions: The willingness to disclose intimate information to a chatbot and its impact on emotional well-being. *Interacting with Computers*, 36(5), 279–292. <https://doi.org/10.1093/iwc/iwae016>
10. De Freitas, J., & Cohen, I. G. (2025). Disclosure, humanizing, and contextual vulnerability of generative AI

- chatbots. *NEJM AI*, 2(2), AIpc2400464.doi/full/10.1056/AIpc2400464
11. Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
12. Diehl, K., Jansen, C., Ishchanova, K., & Hilger-Kolb, J. (2018). Loneliness at universities: Determinants of emotional and social loneliness among students. *International Journal of Environmental Research and Public Health*, 15(9), 1865. <https://doi.org/10.3390/ijerph15091865>
13. Ellard, O. B., Dennison, C., & Tuomainen, H. (2023). Interventions addressing loneliness amongst university students: a systematic review. *Child and Adolescent Mental Health*, 28(4), 512–523. <https://doi.org/10.1111/camh.12614>
14. Fabeku, O. E., & Fasanmi, S. A. (2024). Appraisal of transition challenges and adjustment of first-year students at a Nigerian university. *Educational Challenges*, 29(2), 80–96. <https://doi.org/10.34142/2709-7986.2024.29.2.05>
15. Fitzpatrick, K. K., Darcy, A., & Vierhile, M. (2017). Delivering cognitive behavior therapy to young adults with symptoms of depression and anxiety using a fully automated conversational agent (Woebot): A randomized controlled trial. *JMIR Mental Health*, 4(2), Article e19. <https://doi.org/10.2196/mental.7785>
16. Folk, D., & Dunn, E. (2026). How does turning to AI for companionship predict loneliness and vice versa? *Psychological Science*, 37(4), 276–286. <https://doi.org/10.1177/09567976261427747>
17. Ge, R. (2025). From pseudo-intimacy to cyber romance: A study of human and AI companions' emotion shaping and engagement practices. *Communications*, 52(1), 211–221.
18. Giese, H., Stok, F. M., & Renner, B. (2020). Early social exposure and later affiliation processes within an evolving social network. *Social Networks*, 62, 80–84. <https://doi.org/10.1016/j.socnet.2020.02.008>
19. Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, 18(1), 59–82. <https://doi.org/10.1177/1525822X05279903>
20. Isaiah, U. S., Naibo, A. T., Ugondo, M. T., Ogwuche, S., Iziengbuwa, S. J., Abiama, E. E., & Ineme, M. E. (2026). The role of AI companions in supporting adaptive emotion regulation among university students with social anxiety. *Discover Mental Health*, 6(1), Article 53. <https://doi.org/10.1007/s44192-026-00387-7>
21. Kim, M., Lee, S., Kim, S., Heo, J. I., Lee, S., Shin, Y. B., Cho, C. H., & Jung, D. (2025). Therapeutic potential of social chatbots in alleviating loneliness and social anxiety: Quasi-experimental mixed methods study. *Journal of Medical Internet Research*, 27, e65589. <https://doi.org/10.2196/65589>
22. Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukopadhyay, T., & Scherlis, W. (1998). Internet paradox: A social technology that reduces social involvement and psychological well-being? *American Psychologist*, 53(9), 1017–1031. <https://doi.org/10.1037/0003-066X.53.9.1017>
23. Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3), 497–529. <https://doi.org/10.1037/0033-2909.117.3.497>
24. Lipson, S. K., Lattie, E. G., & Eisenberg, D. (2019). Increased rates of mental health service utilization by U.S. college students: 10-year population-level trends (2007–2017). *Psychiatric Services*, 70(1), 60–63. <https://doi.org/10.1176/appi.ps.201800332>
25. Maples, B., Cerit, M., Vishwanath, A., & Pea, R. (2024). Loneliness and suicide mitigation for students using GPT3-enabled chatbots. *npj Mental Health Research*, 3(1), Article 4. doi.org/10.1038/s44184-023-00047-6.
26. Mbiti, J. S. (1990). *African religions & philosophy*. Heinemann.
27. Moussawi, S., Koufaris, M., & Benbunan-Fich, R. (2021). How perceptions of intelligence and anthropomorphism affect adoption of personal intelligent agents: S. Moussawi et al. *Electronic Markets*, 31(2), 343–364. doi.org/10.1007/s12525-020-00411-w
28. Nie, N. H. (2001). Sociability, interpersonal relations, and the Internet: Reconciling conflicting findings. *American Behavioral Scientist*, 45(3), 420–435. <https://doi.org/10.1177/00027640121957277>
29. Nwoye, A. (2015). What is African psychology the psychology of? *Theory & Psychology*, 25(1), 96–116. <https://doi.org/10.1177/0959354314565116>
30. Pedrelli, P., Nyer, M., Yeung, A., Zulauf, C., & Wilens, T. (2015). College students: Mental health problems and treatment considerations. *Academic Psychiatry*, 39(5), 503–511. <https://doi.org/10.1007/s40596-014-0205-5>
31. Pittman, L. D., & Richmond, A. (2008). University belonging, friendship quality, and psychological adjustment during the transition to college. *The Journal of Experimental Education*, 76(4), 343–362. <https://doi.org/10.3200/JEXE.76.4.343-362>

32. Primack, B. A., Shensa, A., Escobar-Viera, C. G., Barrett, E. L., Sidani, J. E., Colditz, J. B., & James, A. E. (2017). Use of multiple social media platforms and symptoms of depression and anxiety: A nationally-representative study among U.S. young adults. *Computers in Human Behavior*, 69, 1–9. <https://doi.org/10.1016/j.chb.2016.11.013>
33. Reeves, B., & Nass, C. (1996). *The media equation: How people treat computers, television, and new media like real people and places*. Cambridge University Press.
34. Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57(6), 1069–1081. <https://doi.org/10.1037/0022-3514.57.6.1069>
35. Skjuve, M., Følstad, A., Fostervold, K. I., & Brandtzaeg, P. B. (2022). A longitudinal study of human–chatbot relationships. *International Journal of Human-Computer Studies*, 168, 102903. <https://doi.org/10.1016/j.ijhcs.2022.102903>
36. Strayhorn, T. L. (2019). *College students' sense of belonging: A key to educational success for all students* (2nd ed.). Routledge.
37. Tinto, V. (2012). *Leaving college: Rethinking the causes and cures of student attrition*. University of Chicago Press.
38. Twenge, J. M., Haidt, J., Blake, A. B., McAllister, C., Lemon, H., & Le Roy, A. (2021). Worldwide increases in adolescent loneliness. *Journal of Adolescence*, 93(1), 257–269. doi/abs/10.1016/j.adolescence.2021.06.006
39. Walton, G. M., & Cohen, G. L. (2011). A brief social-belonging intervention improves academic and health outcomes of minority students. *Science*, 331(6023), 1447–1451. <https://doi.org/10.1126/science.1198364>
40. Wang, Y., Li, X., Zhang, Q., Yeung, D., & Wu, Y. (2025). Effect of a cognitive behavioral therapy-based AI chatbot on depression and loneliness in Chinese university students: Randomized controlled trial with financial stress moderation. *JMIR mHealth and uHealth*, 13, e63806. <https://doi.org/10.2196/63806>
41. Winnicott, D. W. (1953). Transitional objects and transitional phenomena: A study of the first not-me possession. *The International Journal of Psycho-Analysis*, 34, 89–97.
42. Yin, R. K. (2018). *Case study research and applications* (Vol. 6, pp. 200–224). Thousand Oaks, CA: Sage.

