

# From Assistance to Dependence: The Growing Influence of Chatbots in Human Life

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*Abstract- The rapid rise of Artificial Intelligence, particularly conversational models like ChatGPT, has revolutionized how individuals learn, work, and communicate. Since 2021, AI has shifted from a futuristic concept to an everyday reality, reshaping expectations and experiences across educational and professional spaces. With ChatGPT's introduction in 2022, its adoption grew exponentially as students and users embraced it as a powerful support system that can solve assignments, coding tasks, and offer real-time guidance. This paper explores the emergence and widespread usage of chatbots, highlighting the massive growth in user engagement and the transformation in learning patterns. It also examines the emerging dependency on AI tools and emphasizes the importance of balancing innovation with independent thinking to ensure technology remains an aid, not a replacement, for human intellect.*

*Index Terms- Artificial Intelligence, ChatGPT, AI in ChatBOT, Human-AI Interaction.*

## I. INTRODUCTION

Back in 2021, when AI and Machine Learning were the hottest buzzwords on the planet, the world felt like it was standing at the edge of a sci-fi future. Conversations weren't just discussions; they were electric storms of imagination. Tech forums, classrooms, YouTube channels, corporate boardrooms, everyone was whispering, debating, predicting: "The future is arriving faster than we ever thought."

Grand visions floated around like neon dreams. The way self-thinking machines, automated cities, robots with emotions, and a digital world were blending seamlessly with our reality, the expectations towards a futuristic vision. It felt like humanity was unlocking a cheat code, preparing to step into a new version of life where innovation wasn't just happening but exploding.

Then came 2022, a year nobody expected to be this iconic. Suddenly, every school and college student found their new best friend. It was not a classmate,

not a senior, not even Google. It was a mysterious and genius friend named ChatGPT.

Suddenly, education had a new twist. It wasn't just books and lectures anymore; it was teamwork with an AI buddy who never complained, never slept, and always replied faster than imagined. The academic world hadn't just evolved but it had unlocked a whole new cheat code. And everyone loved it.

Students weren't just studying anymore; they were collaborating with an AI buddy who had zero judgment and infinite patience. Education suddenly felt less like a struggle and more like a game, where your cheating code responded instantly. The academic battlefield was never the same again and honestly, what a time to be alive!

## II. IDENTIFYING, RESEARCH AND COLLECTION OF IDEA

Identifying and refining the core idea of this research paper formed the foundation of the study. Since the topic revolves around the influence of chatbots and the growing dependency on AI tools like ChatGPT, the preliminary step involved exploring its relevance, scope, and current significance in academic and real-world contexts. To ensure the selected topic was viable and substantial, the following approaches were undertaken:

### 1. Reviewing Existing Literature

The first stage involved reading already published articles, journals, and research papers related to Artificial Intelligence, chatbot adoption, human-AI interaction, digital transformation, and learning behaviours. This helped in gaining clarity on:

- Historical emergence of AI chatbots
- Patterns of user adoption
- Benefits and risks highlighted by researchers

- Existing gaps in knowledge

By analysing previous scholarly work, it became evident that the rapid growth of chatbots, especially after the release of ChatGPT in 2022, is a highly relevant and under-explored area that requires deeper academic attention.

## 2. Online Research and Data Exploration

Extensive online research was conducted using trusted websites, news portals, AI reports, and analytics platforms. Goggling the topic enabled access to:

- Reports on global AI adoption
- User statistics and growth rates of ChatGPT
- Surveys on how students and professionals use AI
- Discussions on chatbot dependency and its societal effects

This digital exploration helped verify data trends such as ChatGPT's exponential rise from 100 million users in Jan 2023 to nearly 800 million in 2025 and provided quantitative support for the study.

## 3. Participating in Conferences and Discussions

To understand the evolving narrative around chatbot technology, key insights were gathered from:

- AI conferences
- Technology workshops
- Webinars by industry experts
- Educational symposiums

These platforms discussed the ethical, educational, and behavioural impacts of AI tools. Listening to real-world concerns and predictions allowed the research idea to develop with a broader and more practical perspective.

## 4. Understanding Key Terminologies and Concepts

Before structuring the research, it was important to understand the technical and scientific terms associated with AI and chatbots. Terms such as Machine Learning, Natural Language Processing, multimodal AI, user engagement metrics, digital dependence, and automation trends were studied extensively.

This conceptual groundwork ensured that the research was based on clear comprehension and accurate interpretation of the technological elements shaping modern chatbot use.

## III. STUDIES AND FINDINGS

*The Prominent Role of Chatbots like ChatGPT in Our Lives:*

In the past few years, chatbots such as ChatGPT have transformed from experimental tools into daily digital companions. Their ability to communicate naturally, understand context, and provide instant, reliable responses has made them an inseparable part of how people learn, work, and connect. From classrooms to boardrooms, these AI systems now assist in decision-making, creativity, productivity, and even emotional expression.

The presence of AI chatbots has become so normalized that asking an AI for help often feels as natural as asking a friend. This defines 'A friend in need is a friend indeed'.

*Why We Use Chatbots?*

Chatbots being handy is one of the reasons to be used frequently. Other reasons include:

- Instant Information Access

People rely on chatbots for quick answers and explanations without the need to browse multiple sources. ChatGPT condenses complex topics into simple, understandable insights. This is saving time and effort.

- Academic and Professional Assistance

Students use ChatGPT for assignments, essays, and coding support, while professionals utilize it for writing reports, generating ideas, drafting emails, and analysing data. It has become an on-demand mentor and coworker.

- Creativity and Idea Generation

Writers, designers, and content creators often turn to AI chatbots for brainstorming and polishing ideas. The ability to spark creativity instantly has made these tools popular among creative professionals.

- Emotional and Social Support

Interestingly, many users also engage with chatbots for conversation and motivation. The human-like tone provides comfort and companionship, especially during moments of stress or loneliness.

After gathering and analysing information from various sources, the next essential step is to articulate the research in a structured and meaningful manner. The ideas collected during literature review, online exploration, expert discussions, and conceptual understanding must now be organized into a cohesive and academically sound research paper.

#### *A. Bits and Pieces Together*

This approach involves compiling all the researched information into a unified framework. For this study, the insights on AI evolution, chatbot adoption, behavioural trends, user statistics, and the emerging dependency on tools like ChatGPT were collectively arranged to build the core structure of the paper.

By referring to previous scholarly work and real-world examples, the study uses existing knowledge as a foundational block to construct deeper analysis. Each concept, whether related to educational usage, productivity enhancement, emotional dependence, or ethical concerns has been synthesized into well-organized sections to ensure clarity and continuity throughout the paper.

This method ensures that the research is holistic, data-driven, and logically sequenced, allowing the reader to connect every “piece” of gathered information into a complete and meaningful picture.

#### *B. Jump Start Approach*

In this approach, continuous guidance from fellow learners, researchers, or domain experts helps refine and improve the research content. Throughout the development of this paper, insights were strengthened by exploring expert perspectives from AI conferences, industry discussions, and educational technology forums.

Such interactions offered valuable suggestions regarding the behavioural impact of AI tools, the rise of technological dependency, and the future direction of human–AI collaboration. These external inputs enhanced the quality and credibility of the

research, enabling a confident and well-supported start to the writing process.

By incorporating expert comments and contemporary viewpoints, the paper gained depth, relevance, and stronger analytical grounding.

#### *C. Use of Simulation Software*

Though simulation tools are more commonly used in technical or engineering research, their principles can also support analytical studies. Software such as MATLAB and other data-modelling tools can simulate patterns, predict growth trajectories, or visualise behavioural trends.

For a study focused on chatbots and user engagement, simulations can assist in:

- Modelling user growth patterns over the years
- Comparing adoption rates across different timelines
- Predicting future trends in AI usage
- Assessing dependency levels based on statistical input

By using real data such as ChatGPT’s rise from 100M users in 2023 to 800M users in 2025, simulation software can help generate graphs, growth curves, or predictive models. These visual elements further strengthen the research and make the analytical findings clearer and more compelling.

## IV. CONCLUSION

In just a few years, chatbots like ChatGPT have transitioned from being thrilling innovations to becoming an inseparable part of everyday life. What once began as simple convenience has swiftly evolved into a daily necessity. Students depend on them for learning, professionals for productivity, and individuals for instant answers, emotional reassurance, and decision-making. With their remarkable speed, accuracy, and accessibility, AI companions have fundamentally reshaped how we work, study, think, and communicate.

However, this technological revolution comes with its own paradox. While chatbots empower creativity and efficiency, they also highlight a growing dependency that is subtly reshaping our approach to problem-solving. The true challenge lies not in using AI more, but in using it wisely i.e. balancing innovation with human judgment to

ensure that technology continues to enhance our capabilities rather than replace them.

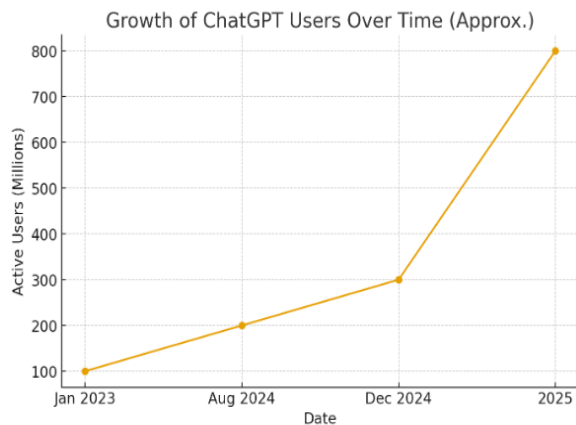
Ultimately, chatbots like ChatGPT symbolize both progress and paradox. They simplify life, boost productivity, and broaden human potential, yet they also test the boundaries of independent thought and authentic human connection. The future, therefore, will not be defined by how intelligent AI becomes, but by how intelligently humanity chooses to coexist with it.

## APPENDIX

### Appendix A: Graphical Representation of Growth

Let's take an example of ChatGPT's progress over the years.

It's rapid evolution highlights how quickly conversational AI has advanced in intelligence, capability, and real-world usefulness.



### Appendix B: User Growth Data Used in the Study

The following dataset was used to analyse the rise in global adoption of ChatGPT and to calculate growth rates and trends:

| Year / Period | Users (Millions/Crores) |
|---------------|-------------------------|
| Jan 2023      | 100M/10 Cr              |
| Aug 2024      | 200M/20 Cr              |
| Dec 2024      | 300M/30 Cr              |
| 2025          | 800M/80 Cr              |

### Appendix C: Growth Calculation Formulas

- Year-to-Year Growth Formula:

$$\text{Growth \%} = \frac{(\text{New Value} - \text{Old Value})}{\text{Old Value}} \times 100$$

- Examples:

Jan 2023 → Aug 2024  
 $((200 - 100) / 100) \times 100 = 100\%$  growth

Aug 2024 → Dec 2024  
 $((300 - 200) / 200) \times 100 = 50\%$  growth

Dec 2024 → 2025  
 $((800 - 300) / 300) \times 100 = 167\%$  growth

- CAGR Formula (Overall Growth)

CAGR = Compound Annual Growth Rate

$$\text{CAGR} = (\text{Ending Value} / \text{Beginning Value})^{(1/n)} - 1$$

Beginning value = 100M (Jan 2023)

Ending value = 800M (2025)

n = ~2 years

Therefore, CAGR =  $(800 / 100)^{(1/2)} - 1$   
 $= (8)^{0.5} - 1$   
 $= 2.828 - 1 = 1.828 = 182.8\%$

ChatGPT grew at an approx. CAGR of ~183% per year. That's hyper-scale growth.

- Slope of Growth (Trend Line Formula)

Growth Rate  $\approx (800M - 100M) / 24$  months  
 $\approx 700M / 24 \approx 29.16M/\text{month}$

- Points to Remember:

- ChatGPT users grew from 100M to ~800M in ~2 years
- CAGR  $\approx 183\%$  per year
- Average growth  $\approx 29$  million users per month
- Growth spikes observed in 2024–2025 due to:
  - AI adoption in education & enterprises
  - Expansion of GPT models & ecosystem
  - Introduction of multimodal & real-time AI
- Impact of Chatbots on Modern Life

### Appendix D: Summary of Advantages and Disadvantages of Chatbots

The integration of chatbots has redefined the meaning of convenience. Education systems have adapted to AI-assisted learning, workplaces have embraced automation, and individuals now multitask with AI guidance. Communication barriers have lessened as chatbots bridge gaps in language, knowledge, and technical skills. However,

this transformation has also sparked debates about originality, authenticity, and over-reliance on artificial intelligence.

While AI has enhanced access to knowledge, it has also blurred the line between human learning and machine assistance. The impact is both empowering and cautionary—pushing society toward a new era of human-AI collaboration.

Let's look at the boons and banes of using chatbots!

#### *Advantages of Chatbots like ChatGPT:*

- **Efficiency:** Provides instant, accurate responses that save time and effort.
- **Accessibility:** Available 24/7 for guidance, learning, and support.
- **Personalization:** Adapts to user preferences and learning styles.
- **Creativity Booster:** Generates fresh ideas and helps overcome creative blocks.
- **Cost-Effective:** Reduces the need for additional manpower or tutoring in many scenarios.

#### *Disadvantages and Concerns:*

- **Over-Dependence:** Excessive reliance can reduce critical thinking and originality.
- **Accuracy Issues:** Despite improvements, responses can occasionally include factual or contextual errors.
- **Privacy Risks:** Conversations may raise data security or ethical concerns.
- **Job Displacement Fears:** Automation of certain roles may affect employment patterns.
- **Loss of Human Connection:** Emotional or social interaction may become more mechanical when overusing AI companions.

#### *Appendix E: Key Terminology Used in Research*

- **AI** – Machines performing human-like tasks
- **Chatbot** – Software that simulates conversation
- **NLP** – Language understanding by machines
- **Machine Learning** – Systems learning from data
- **User Engagement** – Level of user interaction
- **Digital Dependence** – Reliance on technology

#### Appendix F: Sources of Secondary Research

- Journals on AI and ML
- News articles on ChatGPT growth
- Technology conference discussions
- Blogs and reports on digital transformation
- Academic materials on human–AI interaction

#### Appendix G: Additional Notes

- Research includes both qualitative and quantitative insights.
- User numbers are based on publicly available estimates.
- Growth models are for academic purposes only.

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