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THE INFLUENCE OF 5G NETWORK ON HOSTEL STUDENTS: ACADEMIC GROWTH AND PSYCHOLOGICAL CHALLENGES

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ABSTRACT

The rise of 5G technology has transformed the way hostel students interact with academic and non-academic digital platforms. With ultra-fast internet speed, low latency, and improved connectivity, 5G enhances access to online learning materials, virtual classes, digital libraries, and cloud-based tools. However, constant accessibility has also increased screen dependency, stress levels, digital addiction, and reduced real-life social interaction. This study explores both the positive and negative impacts of 5G on hostel students. Using a structured questionnaire and literature review, the research highlights that while 5G boosts academic productivity, it simultaneously contributes to psychological challenges. The study concludes with recommendations to maintain digital balance and promote healthier usage habits among hostel students.

KEYWORDS: 5G Technology, Academic Growth, Psychological Challenges, Hostel Students, Mental Health, Digital Dependency, Online Learning.

INTRODUCTION

5G technology represents the fifth generation of mobile networks, offering significantly faster speeds, lower latency, and improved connectivity compared to previous generations like 4G. This advancement has deeply influenced the educational landscape, especially for hostel students who rely heavily on digital platforms for academics, communication, and

entertainment. Enhanced connectivity enables students to join online classes without interruption, download study materials quickly, interact with peers on collaborative platforms, and stay informed through digital sources.

However, access to high-speed internet also brings challenges. The ability to constantly stay online encourages excessive screen time, engagement in social media, online gaming, and binge-watching, which may negatively affect students' academic focus and mental health. Issues such as sleep deprivation, anxiety, stress, and reduced physical activity have become increasingly common among hostel students. Therefore, it becomes important to analyse how 5G affects students both academically and psychologically.

Literature Review

Kumar and Singh (2022) reported that high-speed internet significantly improves learning efficiency by providing quick access to global educational content, suggesting that technologies like 5G enhance academic engagement and motivate students to participate actively in online learning environments **[1]**. Thomas and Varma (2023) examined the role of 5G in supporting immersive learning tools such as augmented reality (AR), virtual reality (VR), and AI-driven educational systems, concluding that the speed and stability of 5G enable these technologies to function smoothly and provide students with deeper conceptual understanding **[2]**. Similarly, Li and Zhao (2022) highlighted that 5G networks support collaborative learning by allowing students to participate in stable video conferencing, share large academic files quickly, and engage in group discussions more effectively, thereby improving overall communication and teamwork in academic settings **[3]**.

Young and Rogers (2021) explored digital behaviour among students with access to high-speed internet and found that learners tend to spend significantly more time online, frequently shifting between academic tasks and recreational activities, which increases the possibility of digital distraction **[4]**. Mehta and Rao (2023) focused on hostel students and observed that the flexibility and independence associated with hostel life often contribute to excessive internet use, noting that 5G makes it easier for students to engage in long hours of streaming, online gaming, and social media browsing, resulting in digital dependency **[5]**. Kapoor (2023) further emphasized that students often misjudge the academic relevance of their online activities, spending more time on entertainment than on educational content despite having access to advanced learning resources **[6]**.

Chen et al. (2021) investigated the psychological effects of digital dependency and identified strong connections between high-speed internet use and mental health challenges such as anxiety, emotional exhaustion, and social withdrawal, particularly among university students **[7]**. Sharma and Reddy (2023) found that high-speed networks encourage late-night device usage, leading to sleep disruption, increased stress, and decreased concentration among students, ultimately affecting their academic performance and emotional stability **[8]**. Bhattacharya and Nair (2022) introduced the concept of digital fatigue, explaining that excessive screen time often results in headaches, irritability, and reduced attention span, which negatively impacts students' learning efficiency **[9]**.

Hughes and Benton (2022) examined the social implications of continuous connectivity and noted that although 5G helps students maintain virtual communication with friends and family, it also contributes to a reduction in face-to-face social interaction within hostels, leading to increased feelings of loneliness **[10]**. Verma and Das (2023) described the idea of "digital alertness," stating that constant notifications and uninterrupted connectivity compel students to frequently check their devices, creating anxiety and disturbing their emotional balance and daily routines **[11]**.

Research Methodology

This research adopts a mixed-method approach involving both primary and secondary data. The primary data was collected from hostel students using a structured questionnaire consisting of multiple sections, including demographic information, academic impact, internet usage patterns, psychological effects, and personal suggestions. Secondary data was gathered from journals, research papers, telecommunication reports, and academic articles.

A descriptive research design was used to quantify the patterns of 5G usage, academic performance, and psychological well-being. An exploratory component was included to analyse underlying behavioural trends and subjective student experiences. The questionnaire used Likert scales to measure student perceptions and open-ended questions to gather qualitative insights.

RESULTS AND DISCUSSION

The findings revealed that most hostel students use 5G for 4–6 hours daily, indicating a strong reliance on high-speed internet. Around 58% of the respondents use 5G primarily for academic purposes, such as online classes, downloading study materials, and research-based tasks. This demonstrates the positive academic influence of 5G technology.

However, nearly 75% of the respondents also reported a significant increase in screen time. Many students admitted experiencing stress, anxiety, and difficulty concentrating on studies due to distractions from social media and online entertainment. Reduced real- life social interactions and increased digital fatigue were common concerns.

Despite the psychological challenges, students acknowledged that 5G connectivity enhanced their ability to communicate with teachers, family, and peers. This support system helped reduce feelings of loneliness and isolation commonly associated with hostel life.

CONCLUSION AND SUGGESTIONS

The study concludes that 5G technology offers significant academic advantages for hostel students by improving their access to online resources and virtual classrooms. However, excessive use leads to psychological problems such as stress, anxiety, and digital addiction. A balance must be maintained through responsible digital practices.

The study suggests the implementation of digital awareness programs, mental health counselling services, and structured hostel routines. Students should adopt healthier habits by regulating screen time, engaging in physical activities, and participating in face- to-face interactions. Hostel authorities should monitor network usage to ensure productive and balanced digital engagement.

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