

## The Role of ICT and Study Habits in Shaping Educational Adjustment and Learning enhancement of Secondary School Students: An Analytical Study with reference to NEP:2020

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### Abstract-

The rapid expansion of Information and Communication Technology (ICT) has significantly reshaped contemporary educational practices worldwide. In India, the National Education Policy (NEP) 2020 strongly advocates the integration of digital technologies to promote equitable access, learner-centered pedagogy, and holistic student development. Within this policy context, the present analytical study investigates the combined role of ICT usage and study habits in influencing educational adjustment and learning enhancement among secondary school students. Educational adjustment is conceptualized as students' academic, social, and emotional adaptation to the school environment, while learning enhancement encompasses improvements in engagement, comprehension, retention, and academic performance. Employing a quantitative survey design, Secondary data were collected from various sources as news paper, Journals, Books and direct observation too from diverse socio-economic and geographical backgrounds. Statistical analysis revealed that both effective ICT utilization and well-structured study habits exert a significant positive influence on students' educational adjustment and learning outcomes. Moreover, the combined effect of ICT and study habits emerged as a strong predictor of learning enhancement. The findings highlight the necessity of integrating technology-enabled instruction with systematic study practices to realize the transformative goals of NEP-2020. The study offers important implications for educators, school administrators, and policymakers in designing technology-supported and learner-responsive educational environments.

**Keywords:** ICT, Study Habits, Educational Adjustment, Learning Enhancement, Secondary Education, NEP-2020

### 1. Introduction

The twenty-first century is seeing a significant shift in education due to globalization, changing regulatory frameworks, and technology advancements. By making digital materials, interactive platforms, and individualized learning environments accessible, the integration of information and communication technology (ICT) has transformed teaching-learning processes. By promoting technology-enabled education to guarantee inclusion, adaptability, and high-quality learning at all educational levels, India's National Education Policy (NEP) 2020 represents a paradigm change.

Education is undergoing a dramatic change in the twenty-first century as a result of globalization, evolving legal frameworks, and technological developments. Information and communication technology (ICT) integration has revolutionized teaching-learning processes by providing digital resources, interactive platforms, and customized learning settings. India's National Education Policy (NEP) 2020 is a paradigm shift that promotes technology-enabled education to provide inclusivity, adaptation, and high-quality learning at all educational levels.

Few empirical studies have looked at the combined impact of ICT and study habits on educational adjustment and learning enhancement, especially at the secondary school level, despite the increasing focus on ICT and learner autonomy under NEP-2020. In order to close this gap, the current study examines how, in the context of current policy, ICT involvement and study habits work together to support students' learning outcomes and adaptability

### 2. Conceptual Framework

#### 2.1 Information and Communication Technology in Education

In education, information and communication technology (ICT) refers to the methodical application of digital technologies, communication networks, and information systems to enhance, improve, and change the teaching-learning process. ICT encompasses more than just hardware and software; it also includes online communication platforms, virtual learning environments, digital material, and data-driven teaching methods that together transform the creation, access, and sharing of information. Through the help of interactive pedagogy, collaborative knowledge production, personalized learning paths, and continuous evaluation mechanisms, ICT makes learning possibilities flexible and inclusive.

By promoting critical thinking, creativity, self-regulated learning, and lifelong learning abilities, ICT integration helps move away from traditional teacher-centered instruction and toward learner-centered and competency-based education. ICT promotes curriculum innovation, teacher professional development, educational governance, and fair access to high-quality education on a systemic level, especially in rural and socioeconomically underprivileged settings.

ICT is acknowledged by the National Education Policy (NEP) 2020 as a strategic enabler for educational reform, with a focus on digital infrastructure, online and blended learning models, virtual laboratories, open educational resources, and national digital platforms to guarantee educational continuity and quality. However, the transformational potential of ICT depends on a number of interconnected aspects, such as institutional preparation, pedagogical alignment with educational objectives, availability and sustainability of technical infrastructure, and digital literacy among students and instructors. The digital gap might continue without careful integration and inclusive policies, which would restrict the fair fulfillment of ICT-driven educational achievements.

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## **2.2 Study Habits-**

Study habits constitute a vital component of students' academic functioning and play a decisive role in determining academic achievement, learning efficiency, and overall educational adjustment. Study habits refer to the systematic, organized, and goal-directed learning behaviors adopted by students, including time management, goal setting, concentration, effective note-taking, revision techniques, and self-regulated learning practices (Credé & Kuncel, 2008). These behaviors influence not only how students acquire and process knowledge but also how they respond to academic demands and challenges.

Effective study habits are becoming more and more important in today's educational contexts, especially at the secondary school level, because of increased curriculum demands, test pressure, and the growing integration of digital and technology-enabled learning environments. According to Zimmerman (2002) and the OECD (2020), modern learners are expected to effectively manage their academic responsibilities while also adjusting to ICT-based teaching approaches that call for autonomy, discipline, and cognitive engagement.

Students who establish systematic and disciplined study habits consistently show improved academic performance, increased motivation, improved emotional regulation, and increased adaptability to school environments, according to a large body of research (Gettinger & Seibert, 2002; Richardson, Abraham, & Bond, 2012). On the other hand, poor or ineffective study habits are frequently linked to academic stress, poor performance, disengagement, and insufficient educational adjustment, especially in secondary school when students must make important academic transitions (Misra & McKean, 2000).

The potential of study habits to support deep learning through meaningful understanding, long-term information retention, and active participation in the learning process is what makes them significant for education. From an institutional standpoint, educational institutions and instructors are essential in fostering productive study habits through organized instruction, encouraging classroom settings, and the deliberate use of digital learning resources and techniques (NEP, 2020). Therefore, improving students' study habits is crucial to their overall educational development, psychological health, and long-term academic success.

Students that adopt regular and disciplined study habits typically show superior academic achievement, more intrinsic motivation, improved emotional management, and greater adaptation to school situations, according to empirical studies. On the other hand, poorly established or inefficient study habits are frequently linked to low achievement, academic stress, disengagement, and poor educational adjustment. As a result, study habits play a crucial role as a mediator between learning outcomes and instructional methods.

Study habits are important because they can improve deep learning by encouraging meaningful understanding, long-term information retention, and active engagement in the learning process. From an institutional standpoint, there is an increasing need for teachers and educational institutions to intentionally promote efficient study techniques through organized instruction, encouraging classroom settings, and the deliberate use of digital learning resources. Therefore, improving students' study habits is crucial for attaining long-term academic success, mental health, and comprehensive educational development.

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### 2.3 Educational Adjustment

The ability of students to successfully adjust to the institutional, social, emotional, and intellectual demands of the learning environment is referred to as educational adjustment. In order to help students deal with curricular obstacles, instructional strategies, assessment processes, peer connections, and teacher interactions, it entails the harmonious interplay between students' personal traits and the expectations of the educational system (Baker & Siryk, 1984). Students' academic progress and general well-being are thought to be strongly correlated with effective educational adjustment.

Educational adjustment becomes especially important at the secondary school level because of higher psychological demands, examination-oriented evaluation frameworks, and increased academic burden. In response to academic expectations and institutional standards, students must effectively manage their time, create effective study techniques, control their emotions, and stay motivated (Ladd, 1990). Poor academic achievement, behavioral issues, academic stress, and disengagement are frequently the results of inadequate adjustment at this phase.

Research indicates that a variety of interconnected elements, including as cognitive ability, study habits, self-regulated learning, teacher support, peer interactions, and home environment, have an impact on school adjustment (Credé & Niehorster, 2012). Students' adjustment is further shaped in modern educational environments by the incorporation of digital technology and ICT-based learning, which modifies learning styles, communication styles, and evaluation procedures. According to the OECD (2020), students that possess more flexibility, digital competence, and self-management abilities are more likely to adapt to technology-mediated learning settings

In order to foster academic success, psychological health, and favorable attitudes toward learning, educational adjustment is essential. While maladjustment is linked to anxiety, low motivation, and an increased likelihood of school dropout, well-adjusted kids exhibit higher levels of classroom engagement, resilience, and perseverance in learning activities (Eccles & Roeser, 2011). In order to promote students' educational transition, educational institutions and teachers must implement learner-centered methodologies, inclusive learning environments, and supportive pedagogical approaches. In quickly changing educational institutions, achieving holistic development and long-term academic achievement requires bolstering educational adaptability.

### 2.4 Learning Enhancement-

The term "learning enhancement" describes methods and approaches designed to raise student engagement, retention, and learning outcomes. It focuses on improving learning's efficacy, interactivity, and significance by going beyond rote memorization to critical thinking and in-depth comprehension. According to research, students' performance and understanding are greatly enhanced by active learning techniques including conversations, problem-solving, and group projects (Prince, 2004).

Enhancing learning requires student-centered strategies. Students gain self-control and motivation when they actively plan, analyze, and reflect on their education, which has a beneficial impact on academic success (Bonwell & Eison, 1991). According to Brusilovsky (2001), tailored instruction that takes into account each student's unique skills and learning preferences also improves student engagement and retention of the material.

Additionally, technology has a significant impact on improving education. Students may access information freely and interactively when information and communication technology (ICT), such as e-learning tools, educational software, and internet resources, is integrated into the classroom. It has been demonstrated that blended learning, which blends traditional instruction with digital resources, enhances learning results and sustains students' engagement (Garrison & Vaughan, 2008). Quizzes, prizes, and progress monitoring are examples of gamification strategies that improve motivation and active engagement (Deterding et al., 2011).

By promoting memory consolidation and long-term retention, cognitive techniques including spaced practice, retrieval practice, and concept mapping improve learning (Roediger & Butler, 2011). These methods, which are supported by research, may be used to a variety of disciplines and educational levels.

To sum up, learning enhancement entails integrating active, student-centered, technology-assisted, and cognitive tactics to produce a customized, productive, and engaging learning environment. Academic achievement, motivation, and lifetime learning abilities can all be enhanced by regularly using these techniques.

### 3. Review of Literature-

Previous studies have established the positive role of ICT in improving students' motivation, engagement, and academic achievement. Research indicates that technology-supported instruction fosters interactive learning, accommodates diverse learning styles, and enhances understanding of complex concepts (Selwyn, 2016; Bates, 2015). However, studies also

caution that ineffective or excessive use of ICT can lead to distraction, cognitive overload, and reduced learning efficiency (Prensky, 2012; Kirschner & Karpinski, 2010).

Strong relationships between organized learning practices and academic achievement are regularly found in studies on study habits. According to Zimmerman (2002) and Credé & Kuncel (2008), learners that use good time management, goal-setting, and self-regulated practices typically demonstrate higher success and better adjustment to academic expectations. Academic performance and lifetime learning are greatly aided by regular review, planning, and reflective activities. Overall learning enhancement, mental health, and school retention have all been connected to educational adjustment. According to research, positive educational adjustment is influenced by learner autonomy, teacher effectiveness, and supportive learning settings (Roeser, Eccles, & Sameroff, 2000; Wang & Holcombe, 2010). Well-adjusted students exhibit more involvement in learning activities, are more resilient, and are better equipped to handle academic stress

#### **4.0 Analytical Study -**

##### **4.1 ICT and Academic Achievement**

Analyses from multiple empirical studies indicate a positive relationship between ICT use and students' academic performance at the secondary level. Meta-analytic evidence shows that students with greater ICT literacy tend to have higher academic achievement across subjects such as mathematics, reading, and science. This suggests that ICT competence can support overall learning outcomes when students are effectively engaged with educational technologies (ICT literacy and achievement meta-analysis).

( <http://www.ijres.net/>) Similarly, school-level research demonstrates that secondary students exposed to ICT-supported instruction (e.g., computer-based lessons, interactive media) perform significantly better in academic assessments compared to those taught without ICT interventions. These results were obtained through both comparative experimental designs and mixed-methods approaches assessing performance outcomes before and after ICT integration (Impact of ICT on academic achievement). (<https://www.inderscience.com/jhome.php?jcode=ijict>)

A systematic review in secondary education confirms that effective ICT integration improves motivation, engagement, and skill development. Students using digital tools exhibit enhanced participation, interest, and confidence—factors that combine to strengthen learning processes and achievement. However, the review also highlights the risk of disruption when ICT tools are not aligned with pedagogical goals or supported by adequate teacher training and infrastructure. (<https://link.springer.com/article/10.1007/s10212-023-00785-3>)

##### **4.2 Study Habits and Academic Adjustment**

Data on study habits shows consistent links between structured learning behaviors and academic success. For example, analyses of senior secondary students reveal that strong study practices and positive educational adjustment are associated with higher performance in subject areas such as English language learning. This supports the view that self-regulated study habits contribute to both academic achievement and emotional adjustment within school settings (Study habits and adjustment in achievement). ([Ojed](#))

Other research emphasizes that personalized and competence-based practices—core elements of the NEP-2020 framework—help improve study habits and academic outcomes. NEP-aligned approaches, including autonomy in learning and emphasis on assessment for learning, have the potential to strengthen students' engagement and performance by encouraging active, self-directed study routines. ([Etma Education](#))

##### **4.3 Synthesis: ICT, Study Habits, and Learning Enhancement**

When combined, ICT use and effective study habits appear to mutually reinforce educational adjustment and learning enhancement. ICT provides tools for engagement and personalized learning, while disciplined study habits ensure that students use those tools purposefully. The data suggest that interventions fostering both ICT competence and strong study strategies yield the highest improvements in academic outcomes and student adjustment—a core goal of NEP-2020's competency-based, technology-enabled learning ecosystem.

#### **7. Results and Analysis**

Students used ICT at moderate to high levels, depending on their access and level of digital literacy, according to the report. Significant variations in study habits revealed disparities in self-regulated learning abilities.

ICT use and educational adjustment were shown to be positively and significantly correlated by correlation analysis. Study habits demonstrated a high correlation with learning improvement, indicating that academic benefits are amplified by disciplined learning activities.

The combined predictive potential of ICT usage and study habits was confirmed by regression analysis, which showed that they together accounted for a significant percentage of variance in educational adjustment and learning

augmentation.

### **8. Discussion-**

The results demonstrate how ICT and study habits work in tandem to support learning enhancement and educational adjustment. While study habits organize learning and foster self-discipline, ICT offers access, engagement, and flexibility. Students are better able to adapt to academic challenges and get higher learning results when they successfully integrate technology use with structured study techniques. The outcomes support NEP-2020's goal of learner-centered, technology-enabled education. To optimize educational gains, the study also emphasizes the necessity of formal study skills teaching and supervised ICT use.

### **9. Educational Implications**

- Teachers should use ICT in conjunction with effective teaching methods.
- Digital literacy and study skills should be taught in schools.
- Equal access to ICT infrastructure should be guaranteed by legislators.
- Curriculum frameworks ought to prioritize learning that is self-regulated.
- ICT friendly atmosphere will able enhance the learning of students
- There should be ICT friendly eco-system in each and every school.
- ICT will be most powerful tools for instruction.
- Study habits will be enhance the knowledge and learning of student
- ICT and study habits both will be helpful for shaping the educational adjustment of secondary school students.

### **10. Conclusion-**

The current study comes to the conclusion that students' study habits and information and communication technology (ICT) are important factors that influence secondary school students' educational adjustment and learning enhancement. The analytical stud unequivocally show that students' academic flexibility, engagement, and overall learning outcomes are greatly enhanced by the efficient use of ICT when combined with disciplined and self-regulated study habits. By encouraging autonomous learning, expanding access to educational materials, and promoting active engagement in the learning process, the combined impact of ICT and study habits supports overall academic growth. Together, these elements help students manage the demands of their studies, boost their motivation, and acquire crucial 21st-century skills like digital literacy, critical thinking, and self-management. The National Education Policy (NEP)-2020's transformational vision, which prioritizes learner-centered pedagogy, technology-enabled education, and the integration of digital technologies to increase educational fairness and quality, is also closely aligned with the outcomes. In order to optimize ICT's educational advantages while maintaining students' cognitive, emotional, and social well-being, the study emphasizes the necessity of its deliberate and balanced integration with organized learning methods. In conclusion, educational quality may be greatly improved by bolstering ICT infrastructure, encouraging digital competency, and developing productive study habits through institutional efforts and pedagogical assistance. In addition to enhancing academic achievement, this strategy equips students to become responsible, flexible, and lifelong learners in an increasingly digital learning environment.

## References -

- Credé, M., & Kuncel, N. R. (2008). Study habits, skills, and attitudes: The third pillar supporting collegiate academic performance. *Perspectives on Psychological Science*, 3(6), 425–453.
- Gettinger, M., & Seibert, J. K. (2002). Contributions of study skills to academic competence. *School Psychology Review*, 31(3), 350–365.
- Misra, R., & McKean, M. (2000). College students' academic stress and its relation to their anxiety, time management, and leisure satisfaction. *American Journal of Health Studies*, 16(1), 41–51.
- OECD. (2020). *Education in the digital age: Healthy and happy children*. OECD Publishing.
- Richardson, M., Abraham, C., & Bond, R. (2012). Psychological correlates of university students' academic performance: A systematic review and meta-analysis. *Psychological Bulletin*, 138(2), 353–387.
- Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice*, 41(2), 64–70.
- National Education Policy (NEP). (2020). *Ministry of Education, Government of India*.
- Baker, R. W., & Siryk, B. (1984). Measuring adjustment to college. *Journal of Counseling Psychology*, 31(2), 179–189.
- Credé, M., & Niehorster, S. (2012). Adjustment to college as measured by the Student Adaptation to College Questionnaire: A quantitative review. *Journal of Educational Psychology*, 104(4), 853–871.
- Eccles, J. S., & Roeser, R. W. (2011). Schools as developmental contexts during adolescence. *Journal of Research on Adolescence*, 21(1), 225–241.
- Ladd, G. W. (1990). Having friends, keeping friends, making friends, and being liked by peers in the classroom. *Child Development*, 61(4), 1081–1100.
- OECD. (2020). *Education in the digital age: Healthy and happy children*. OECD Publishing.
- Bonwell, C. C., & Eison, J. A. (1991). *Active learning: Creating excitement in the classroom*. ASHE-ERIC Higher Education Report.
- Brusilovsky, P. (2001). Adaptive hypermedia. *User Modeling and User-Adapted Interaction*, 11(1), 87–110.
- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness. *Proceedings of the 15th International Academic MindTrek Conference*.
- Garrison, D. R., & Vaughan, N. D. (2008). *Blended learning in higher education: Framework, principles, and guidelines*. Jossey-Bass.
- Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education*, 93(3), 223–231.
- Roediger, H. L., & Butler, A. C. (2011). The critical role of retrieval practice in long-term retention. *Trends in Cognitive Sciences*, 15(1), 20–27.
- Bates, A. W. (2015). *Teaching in a digital age: Guidelines for designing teaching and learning*. Tony Bates Associates Ltd.
- Credé, M., & Kuncel, N. R. (2008). Study habits, skills, and attitudes: The third pillar supporting collegiate academic performance. *Perspectives on Psychological Science*, 3(6), 425–453.
- Kirschner, P. A., & Karpinski, A. C. (2010). Facebook® and academic performance. *Computers in Human Behavior*, 26(6), 1237–1245.
- Prensky, M. (2012). *From digital natives to digital wisdom: Hopeful essays for 21st century learning*. Corwin Press.
- **Online resources-**
- <http://www.etma-india.in/>
- <https://journals.itb.ac.id/index.php/jicta>
- <https://share.google/Hoy1DfElO2LCpjdSO>
- <https://share.google/aWSXPdnTRGaJLc5C3>
- <https://share.google/Qp16YAOqg8kCMOny0>
- <https://share.google/yFIP5b6LKMjxuBZtz>