1 CHAPTER 1: INTRODUCTION

1.1 Introduction

With the rapid advancement of Artificial Intelligence (AI), the landscape of education is evolving swiftly, particularly in how languages are now taught in modern era. Globalization and the Fourth Industrial Revolution have brought us new creative opportunities along with the new aspect of technological challenges. It plays a crucial role in transmitting information through text, pictures, and sound which can be used in teaching-learning processes. The rapid expansion of technology and digital applications that characterizes the “4th Industrial Revolution” is changing the way we live, work – and learn.

According to Rahman (2009, p. 343), artificial intelligence (AI) produces computer programs that filter knowledge and do independent tasks like computing or student search. Artificial intelligence (AI) creates "intelligent" objects like computer systems (online platforms) and robots that operate and respond similarly to human brains (Karsenti, 2019). Machine intelligence is another name for artificial intelligence (AI) (Mehrotra, 2019). In English Language Teaching (ELT) at the secondary school level, AI presents a futuristic possibility, such as personalized learning experiences, automated assessments, and enhanced student engagement, automated monitoring. AI technologies have been increasingly included into ELT to improve motivation, efficiency and accessibility of teaching and learning. Along with the emergence and growth of Natural Language Processing (NLP), which combines computer science and linguistics, and enables computers to understand and generate human language, both spoken and written (Kumar Attar & Komal, 2022, p. 285), more advanced language learning software, able to communicate with language learners in a manner that greatly resembles human communication, has been developed and put into use as a result of developments in AI.

AI-powered applications, platforms and assistants have been incorporated into the teaching and learning of languages, such as Duolingo, Coursera, Babbel, ChatGPT, Roseta Stone, Bhasha Sangam app, Linguist, Grammarly or Google Assistant. They offer customized learning content and immediate feedback to students. AI can offer personalized learning programs and language exercises adapted to different students’ needs, proficiency levels and learning styles, and provide immediate personalized

feedback on student's vocabulary, grammar and pronunciation, which not only makes language learning more interactive but also helps students achieve better results. This also contributes to increased learner autonomy in developing their English language proficiency. AI has the potential to provide personalized learning experiences by creating contents to individual learner needs, offering immediate feedback through automated assessments, and enabling immersive language learning experiences through speech recognition and AR/VR tools. However, despite these opportunities, there are significant challenges. These include the lack of necessary resources, teacher preparedness, and ethical concerns regarding data privacy and the role of AI in the classroom. In recent years, AI-powered language learning tools have gained significant attention due to their potential to revolutionize language teaching and learning. Teachers may face a lack of training on how to effectively use AI tools.

Additionally, schools may struggle with inadequate resources, and there may be ethical concerns regarding privacy and the possible replacement of human instruction with AI also they might have inadequate funds. The integration of AI in English Language Teaching (ELT) presents us a promising yet complex area, containing both benefits and challenges at the same time. It has potentials to promote personalisation and better learning outcomes in English language teaching. Whereas its high infrastructural costs become hurdles for the developing nations. The integration of AI in English language teaching at the secondary level offers significant possibilities. It has the potential to enhance personalized learning, make assessments more efficient, and boost student engagement. However, for AI to fully realize its potential, schools must address challenges such as the digital divide, teacher training, and ethical concerns regarding AI's role in education. It should provide a comprehensive understanding of both the opportunities and challenges, offering a concrete recommendation for how to come up with complexities and harness the benefits of AI in ELT. This research aims to explore both the potential and the challenges involved in incorporating AI into English language teaching for secondary school students. By understanding the benefits and addressing the challenges, this study seeks to offer a practical solution for optimizing AI integration in ELT at secondary stage in India.

1.2 Title of the Study

The role of AI in English language teaching at secondary level: Possibilities and challenges.

1.3 Background of the Study

The 21st century an era of digital revolution reshaping every aspect of life, including how educational learning experiences is transacted and experienced. Among the most transformative technologies of this century, Artificial Intelligence (AI), which encompasses systems capable of simulating human cognitive functions such as reasoning, problem-solving, and language processing is now reshaping the destiny of human world. AI has moved beyond theoretical constructs and is now being applied in practical, pedagogically relevant ways—particularly in English Language Teaching (ELT).

AI's significance lies in its adaptability and ability to personalize instruction in real-time, which is a major shift from traditional teaching models. The adaptive nature of AI allows it to respond to learner's quest instantaneously, identifying knowledge gaps and customizing resources accordingly .It paves a great path for individualised learning instructions. This capacity for personalization is especially valuable in ELT, where learners often vary widely in their language proficiency, motivation levels and learning styles. Furthermore, it can democratize access to quality instruction by providing scalable solutions that transcend the limitations of human resource constraints. It empowers teachers by taking over time-consuming, repetitive tasks like grading grammar or identifying sentence structure issues, allowing educators to focus more on facilitating higher-order thinking and critical literacy skills.

As digital literacy becomes integral to educational development, nations are now equipping their future citizens with AI based competencies. The Government of India promotes the 'AI for All' initiative, aiming to democratize technology use across society to foster innovation and economic growth. India is recognized as a leader in technology and Artificial Intelligence, with Stanford University ranking it among the top four countries in AI capabilities alongside the US, China, and the UK. Additionally, GitHub highlights India's prominence in the developer community, noting its significant contribution of 24% to global AI projects. It is not only an emerging domain of study but also an enabler of deeper learning in traditional subjects. With its capacity to track student progress, identify learning gaps, and offer immediate feedback, can plays a crucial role in individualized learning pathways.

English, as a global lingua franca, serves as a critical medium in academic, professional and social spheres. In India, where linguistic diversity is both a strength and a challenge, mastering English can significantly enhance a student's academic trajectory, employment prospects and social mobility. English language proficiency is often regarded as a gateway to socioeconomic advancement. It facilitates access to better higher education institutions, global employment opportunities and even mobility within India's increasingly English-oriented bureaucratic and corporate sectors. Yet, widespread disparities in English learning outcomes still prevalent, often dictated by geographic location, school type and socioeconomic status of the individuals. Students in government schools—more specific in rural and semi-urban areas—frequently encounter obstacles such as outdated curricula, large class sizes, inadequate teacher training and lack of access to supplementary teaching learning materials. These challenges contribute to systemic inequities in language teaching.

The integration of AI into classrooms is a global trend. In countries like Finland, Singapore, and South Korea, AI is embedded within the national curriculum to foster digital literacy, computational thinking, and subject-specific mastery. These countries have implemented Intelligent Tutoring Systems (ITS), natural language processing tools(NLP) and adaptive learning platforms with notable success. Finland, for instance, incorporates AI-driven learning analytics into curriculum planning, allowing educators to make data-informed decisions about student progress. Singapore's use of AI in blended learning environments has enhanced student autonomy and engagement, while South Korea's integration of AI-powered writing assistants into English instruction has led to measurable improvements in student performance.

In India, the journey toward AI-enhanced education is at an intermediary stage. While India's National Education Policy (NEP) 2020 envisions a digitally empowered educational system that integrates emerging technologies, including AI, ground-level implementation—especially in government schools—remains a significant challenge. Though urban private schools have begun experimenting with AI-based platforms, public institutions often lack the necessary digital infrastructure, consistent internet connectivity and trained educators to effectively utilize such tools. The digital divide continues to widen the educational gap, marginalizing students who could most benefit from these innovations. This highlights the urgency of designing cost-effective, scalable and culturally contextualized AI interventions for public education systems.

This study focuses on the potential use of AI tools in enhancing story writing skills among Class 9 students at Kendriya Vidyalaya, Pusa, Bihar. Creative writing is a higher-order linguistic task that involves cognitive flexibility, imagination, syntactic accuracy and coherent expression. It engages multiple dimensions of language use—grammar, vocabulary, structure and creativity—making it an ideal domain for evaluating the pedagogical value of AI. It is also a metacognitive process involving planning, drafting, revising and reflecting. In educational research, writing is often viewed as a window into cognitive and linguistic development. Therefore, story writing serves not only as a measure of language proficiency but also as an indicator of a student's ability to synthesize information, construct arguments and communicate effectively.

Traditional teaching often falls short in supporting the process-oriented nature of writing, particularly in under-resourced classrooms where teacher feedback is limited and peer collaboration is minimal. Students are typically taught to reproduce pre-learned formats, with little emphasis on creativity, drafting or revision. These approaches undermine students' confidence and inhibit the development of authentic voices. Feedback, when given, is often delayed or focused narrowly on grammar and punctuation, neglecting broader issues like coherence, style and narrative progression. This is where AI-based writing tools offers a change in thinking—they promote writing as a process and empower students to take ownership of their work.

Here, AI tools like ChatGPT (for idea generation and dialogue modelling), Grammarly (for grammar and style correction) and Microsoft Copilot (for structural coherence) can act as scalable, supplementary teaching agents. ChatGPT enables students to brainstorm story ideas, develop plots, and construct dialogues by simulating conversational prompts. Grammarly provides real-time suggestions for grammar, spelling, punctuation and tone, thus reinforcing rule-based learning through application. Microsoft Copilot helps in reorganizing text, suggesting summaries, and improving coherence, thereby supporting the metacognitive aspects of writing. Together, these tools simulate aspects of one-on-one mentorship while allowing for autonomous, self-paced learning.

The relevance of this research lies in its context. Kendriya Vidyalayas are central government schools that cater to a diverse demographic, making them an ideal ground

for piloting educational innovations. They bridge urban and rural sensibilities and often serve students from transferable or service backgrounds. The semi-urban setting of Pusa, Bihar, provides insights into the unique constraints and possibilities in non-metropolitan government schools. Bihar, despite being one of the most populous states in India, has long struggled with poor educational performance indicators. Yet, schools like Kendriya Vidyalaya offer a controlled yet realistic environment to test scalable interventions.

Moreover, the broader implications of this study extend beyond immediate skill enhancement. By focusing on story writing—a creative and expressive mode of language use—this research contributes to the larger discourse on student agency, imagination, and cognitive development. In the age of standardized testing, such dimensions of learning are often sidelined. AI tools can revitalize interest in writing by making it more interactive, reflective and learner-driven.

The urgency of this research is underscored by the global shift toward blended and hybrid learning models, especially in the aftermath of the COVID-19 pandemic. As schools struggles with learning recovery and pedagogical redesign, AI tools offer timely and impactful solutions. They align with broader educational goals such as the Sustainable Development Goal 4 (SDG4), which advocates for inclusive and equitable quality education and lifelong learning opportunities for all. If leveraged judiciously, AI can play a catalytic role in advancing these goals by supporting under-resourced learners and enabling pedagogical innovations.

The goal is not to replace traditional instruction but to align it with new educational trends, thereby creating a more inclusive, equitable and effective learning environment for all students, regardless of their geographic or socioeconomic background. The study aims to contribute empirical evidence to the field of AI in education while offering practical recommendations for educators, policymakers and developers.

1.4 Significance of the Study

This research holds multifaceted and far-reaching significance that transcends the boundaries of academic inquiry and ventures into the worlds of pedagogy, public policy, technological innovation and social equity. The significance of this study is

structured around five key dimensions: academic, pedagogical, policy-oriented, technological and social.

1.4.1 Academic Significance

In academic circles, the intersection of AI and English Language Teaching (ELT) remains an underexplored yet rapidly emerging area of interest among researchers. While abundant research has focused on AI's application in STEM fields, relatively fewer empirical studies investigate its implications for humanities and language teaching, particularly in school-level contexts. This study contributes to the academic corpus by offering a grounded, data-driven examination of how AI-powered tools like ChatGPT, Grammarly and Microsoft Copilot affect story writing among secondary school students in India.

Moreover, the academic relevance is heightened by the study's setting—a semi-urban government school. Much of the existing research tends to be conducted in well-resourced environments such as international schools or higher education setups. By contrast, this research is rooted in the lived realities of students attending Kendriya Vidyalaya, Pusa, Bihar, thereby enriching the scholarly narrative with data from an underrepresented yet highly relevant educational demographic.

Additionally, the study contributes to the growing field of EdTech and AI ethics in education. It opens avenues for further inquiry, bias in language processing, and the implications of using generative AI in assessment and pedagogy. The dataset, reflections, and outcomes generated by this research can serve as a foundation for subsequent longitudinal, cross-cultural or interdisciplinary studies.

1.4.2 Pedagogical Significance

From a pedagogical standpoint, this study provides actionable insights into the use of AI tools in ELT classrooms, particularly for enhancing creative writing skills—a core yet often neglected aspect of language education. Story writing is a pedagogically enriched activity which fosters imagination, empathy, syntactic fluency and narrative logic. However, it is also one of the most challenging skills to teach, especially in overcrowded and under-resourced classrooms.

This research offers concrete evidence on how AI tools can act as intelligent pedagogical tool—providing scaffolding, individualized feedback and real-time corrections. The results illustrate how ChatGPT can serve as a conversational partner

for brainstorming and narrative planning, Grammarly as a grammar tutor for immediate language support and Microsoft Copilot as a structural guide.

These insights equip teachers with strategies to integrate AI meaningfully without losing their pedagogical role. It also rejects the myth that AI is a threat to teaching jobs, instead highlighting its potential to extend the teacher's role and effectiveness. Teachers can play their roles from mere content deliverers to facilitators of exploratory, student-led learning. The pedagogical implications are therefore not only about tools but about reimagining teacher-student dynamics in the 21st-century classroom.

1.4.3 Policy-Oriented Significance

This study aligns closely with the vision articulated in India's National Education Policy (NEP) 2020, which emphasizes digital transformation, technology integration and learner-centric pedagogical approaches. The NEP advocates for the use of technology to enhance inclusivity, personalization, and skill development. However, there is a paucity of empirical data to guide the practical implementation of these lofty goals, especially in the government school sector.

By conducting study on AI-based interventions in a Kendriya Vidyalaya—a representative public school governed by the Ministry of Education—this research offers field-based evidence to inform national and state-level educational reforms. It highlights infrastructural and training gaps, identifies practical challenges in implementation and offers scalable solutions that can be replicated across similar contexts.

The findings may also be of interest to international agencies such as UNESCO, UNICEF or the World Bank which are involved in funding or advising on digital education policies in the Global South.

1.4.4 Technological Significance

This study serves as a real-world testbed for evaluating the functionality, usability and adaptability of leading AI writing tools in a low-resource educational environment. Unlike lab-based or urban school trials, the study brings to light how these tools perform when used by students with varying levels of digital literacy, limited exposure to English and inconsistent internet connectivity.

The feedback gathered through this research can inform developers and EdTech companies about the user experience of marginalized learners—an audience that is often overlooked in product design. The data can be used to improve user interface

accessibility, develop language support for regional languages, create low-bandwidth versions of software and incorporate culturally relevant examples in content recommendations.

Additionally, the study indirectly addresses ethical and design considerations such as data privacy, age-appropriateness, and the importance of transparent AI decision-making. These are critical issues as AI becomes more embedded in educational software and platforms.

Technologically, this research also supports the open-source and inclusive development of AI tools that do not disproportionately benefit urban, tech-savvy users. It advocates for AI that is as responsive to a Class 9 student in Bihar as it is to a private school student studying in Delhi or Bangalore.

1.4.5 Social Significance

Perhaps the most compelling dimension of this study is its contribution to the cause of educational equity and social justice. In a country as diverse and unequal as India, the promise of AI must not be limited to the privileged one. The digital divide is not merely a technological issue—it is a social fault line that can either be reinforced or dismantled through policy and pedagogy.

It offers a model for how AI tools can empower students from underprivileged communities—students who are often the first generation in their families to receive formal education, who navigate multiple languages and social challenges and who rarely see their voices reflected in the mainstream educational discourse.

The research reveals how AI tools can ignite student interest, boost self-confidence and provide immediate feedback that may otherwise be delayed or absent in traditional settings. These psychological and motivational gains have long-term consequences: increased engagement with school, improved academic performance and greater aspirations for higher education and meaningful careers.

Furthermore, this study contributes to the larger social goal of making education more inclusive, dialogic and learner-centred. It positions students not as passive recipients of content but as active agents capable of using powerful tools to express themselves, revise their work and shape their beautiful learning journey.

1.5 Statement of the Problem

The integration of Artificial Intelligence in education has been widely discussed in academic and policy-making circles. However, its practical application in day-to-day classroom instruction—particularly in government-aided schools in India—remains sporadic and underdeveloped. While private schools in urban areas have started experimenting with AI tools, public schools in rural and semi-urban regions continue to face systemic barriers. These include infrastructural inadequacies, lack of teacher training, limited access to digital devices and unreliable internet connectivity.

Despite the growing emphasis on creative writing in school curricula, students in government schools often struggle with narrative structure, grammar and idea generation. Traditional methods alone have proven insufficient in developing these skills effectively. With the rise of AI tools such as ChatGPT, Grammarly and Microsoft Copilot, there is a need to explore their potential in enhancing student's story writing abilities. This study investigates whether integrating these AI tools into classroom practice can significantly improve the narrative writing skills of Class 9 students in a government school setting.

1.6 Objectives of the Study

This research sets out to achieve the following objectives:

1. To identify and categorize the key applications of Artificial Intelligence in English Language Teaching (ELT) at the secondary school level.
2. To evaluate the effectiveness of selected AI tools— ChatGPT, Grammarly and Microsoft Copilot—in enhancing students' story writing skills.
3. To explore the pedagogical advantages and constraints of implementing AI tools in a semi-urban government school setting.
4. To offer practical, evidence-based recommendations for integrating AI tools into the ELT curriculum in alignment with the digital priorities outlined in India's National Education Policy (NEP) 2020.

1.7 Hypotheses

In alignment with the research objectives, the study posits the following hypotheses:

H_0 :The use of AI tools in ELT does not lead to a statistically significant improvement in story writing skills among students.

1.8 Operational Definitions

In this research, several terms—especially those involving evolving technologies and pedagogical frameworks—require clear, context-specific definitions. Below are the major constructs and their operational meanings as they apply to this investigation.

Artificial Intelligence (AI)

In the context of this study, *Artificial Intelligence (AI)* refers to computational systems designed to simulate human cognitive processes such as learning, reasoning, problem-solving and language comprehension

AI in this study includes both generative AI tools, like ChatGPT, which produce original language-based content in response to prompts and assistive AI tools, like Grammarly and Microsoft Copilot, which analyse and improve user-generated text. The focus is not on AI as a scientific discipline, but rather on its practical pedagogical utility within secondary school English Language Teaching (ELT).

English Language Teaching (ELT)

English Language Teaching (ELT) in this study refers to the structured pedagogical practice of teaching the English language as a subject in school curricula. It encompasses a broad range of linguistic competencies, including reading, writing, listening, speaking, grammar, and vocabulary development.

Within this research, ELT is focused specifically on the creative writing component—namely, story writing—as a measurable skill area. Here it is both a content domain and an instructional context in which AI tools are integrated.

Story Writing

Story Writing is operationally defined as a narrative-based writing activity that requires students to construct original stories with coherent plotlines, character development, setting descriptions and meaningful resolutions. It involves creative expression, grammatical correctness, and structural organization.

In the context of this research, story writing is not treated as a mere literary exercise but as a composite cognitive-linguistic task that reflects multiple dimensions of language learning.

Story writing here is used as both an instructional activity and an evaluative tool to measure the effectiveness of AI-based interventions.

AI Tools

AI Tools in this study are defined as digital applications that leverage artificial intelligence algorithms to assist users in writing-related tasks. These tools provide real-time feedback, corrections, suggestions and content generation functions tailored to the user's input.

The specific AI tools examined in this research include:

1. ChatGPT – A generative AI chatbot developed by OpenAI that can create dialogue, generate story prompts, and assist in brainstorming.
2. Grammarly – A writing assistant that uses AI to check grammar, punctuation, tone, and clarity, while offering corrective feedback and explanations.
3. Microsoft Copilot – An AI-integrated productivity tool in Microsoft Word that assists with summarization, rephrasing, and content structuring.

Secondary Level

Secondary Level refers to students enrolled in Classes 9 and 10 in the Indian educational system, typically aged 13 to 15 years. This stage marks a transition from foundational learning to subject-specialized education and is characterized by increased academic expectations.

In this study, secondary-level education is contextualized within Class 9 at Kendriya Vidyalaya, Pusa, a government school. The term also implies specific curricular and linguistic competencies expected at this stage, including creative writing, grammatical precision and the ability to organize thoughts coherently.

Government School Context

Although not a term commonly defined in many research papers, *Government School Context* has operational significance here. It refers to educational institutions run by the Indian government, characterized by public funding, standardised curricula (usually CBSE or state boards) and a focus on universal access to education.

1.9 Delimitations of the Study

In this study, several delimitations have been set based on contextual, logistical, pedagogical and methodological considerations.

- Population Delimitation: Focus on Class 9 Students at Kendriya Vidyalaya, Pusa, Bihar
- Institutional Delimitation: A Single Semi-Urban Government School

- Skill-Specific Delimitation: Story Writing in ELT Only
- Temporal Delimitation: A Two-Week Instructional Period
    1. **ChatGPT** was used for ideation, character development and plot generation.
    2. **Grammarly** assisted with grammar, sentence-level clarity and vocabulary enhancement.
    3. **Microsoft Copilot** helped with text organization, coherence and summarization.
- Methodological Delimitation: One Single group