Department of English Linguistics and Allied Studies
Name of Programme: English Linguistics

1	**Project Idea**	**Title:** Assessing the Efficacy of AI for Teaching Argumentative Writing **Project idea:** Analyzing how AI-assisted instruction supports students in developing logically structured, coherent, and persuasively articulated argumentative writing.
2	**Process**	A quasi-experimental design was employed using a single intact group of undergraduate students. A two-week process-oriented instructional intervention was implemented to instruct students in using AI to assist their argumentative writing. Participants completed a demographic questionnaire and an essay-based pre-test prior to the intervention to assess initial argumentative writing skills. The intervention was followed by a post-test. The pre- and post-test essays were evaluated by two independent raters using standardized rubrics. Scores were analyzed using a paired sample t-test in SPSS to determine the statistical significance of any improvements, and findings were reported accordingly.
3	**Outcome**	The findings revealed a significant improvement in students' argumentative writing following AI-assisted instruction. On average, their scores increased by 1.66 points. This improvement was statistically significant (p-value of 0.00) with a 95% confidence interval. This outcome indicates that students were better able to organize their ideas, develop stronger arguments, and express their opinions more clearly after engaging with AI tools—highlighting the positive effect of AI on their argumentative writing skills development.
4	**Evidence (Theoretical Basis)**	Language learning, particularly in the domain of academic writing, benefits greatly from adaptive and interactive instructional tools. Argumentative writing, a complex cognitive and linguistic skill, requires learners to structure coherent claims, present evidence, and anticipate counterarguments. Grounded in Vygotsky's sociocultural theory, which emphasizes the role of mediation in learning, this study explores how AI—specifically ChatGPT—can function as an intelligent tutor to scaffold learners' writing development. Building on the principles of process writing and formative assessment, the research investigates the pedagogical potential of AI-assisted instruction in improving students' argumentative writing. Pre- and post-test writing samples were analyzed to evaluate progress, with results indicating marked improvement in the organization, coherence, and critical reasoning in students' writing. The study provides empirical evidence supporting the integration of conversational AI in writing pedagogy,

		underscoring its role as a tool for personalized feedback and learner engagement.
5		**Competitive Advantage or Unique Selling Proposition** The competitive advantage or unique selling proposition of this research is that it provides primary data of how AI-assisted instruction helps in enhancing argumentative writing skills of undergraduate students. It provides evidence of ChatGPT as an effective tool for writing robust arguments. This is helpful for educators looking to incorporate AI into their pedagogy and adds to the growing literature on the effectiveness of AI in education. It also helps in debunking the negative connotations associated with the use of AI particularly by students within their academic domain.
a	**Cost reduction of existing Product**	Not Applicable
b	**Process Improvement which leads to superior product or cost reduction, efficiency improvement of the whole process** (e.g. What is the issue is current process and what improvement you suggests)	In traditional classroom settings, teaching argumentative writing often relies on time-consuming, one-size-fits-all feedback from instructors, which may not adequately address individual student needs or allow for frequent practice and revision. This creates a bottleneck in both learning efficiency and teacher workload. Our research introduces an AI-assisted instructional process using ChatGPT, which offers immediate, personalized feedback and guidance to students. This improvement not only enhances the learning experience by enabling more interactive and responsive support but also significantly reduces the instructional burden on teachers. As a result, the overall process becomes more efficient, scalable, and cost-effective while maintaining or even improving educational quality.
c	**Attainment of any SDG** (e.g. How it is achieved and why it is necessary for the region)	This research contributes to **Sustainable Development Goal 4: Quality Education** by exploring innovative, technology-driven approaches to enhance teaching and learning ESL writing skills. By integrating AI tools like ChatGPT into the instructional process, the study demonstrates how digital resources can support equitable access to high-quality education, especially in developing argmentative writing skills. The findings highlight the potential of AI to provide personalized, scalable, and interactive learning experiences, aligning with the goal of promoting inclusive and effective education for all.
6	**Target Market** (Industries, Groups, Individuals, Families, Students, etc) Please provide some detail about the end-user of the product, process, or service	The primary target market for this research includes language teachers and students, particularly those in tertiary education, teaching/learning argumentative writing skills. Additionally, the research is relevant to teacher trainers, curriculum designers, and educational administrators seeking to integrate technology-enhanced learning into their classrooms. The AI-assisted instructional approach can also benefit autonomous language learners, both in formal education and self-directed study, making it valuable for individuals aiming to improve their argumentative writing.
7	**Team Members (Names & Roll No.)**	Syeda Wania Iqbal (EG-002) Zara Khalil (EG-20003) Marium Sarwar (EG-018) Fasih Khan (EG-020)
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