International Journal of Humanities Arts and Business (IJHAB)
ISSN: 2709-0604 (Print)
ISSN: 3006-4805 (Online)
Volume-04, Issue-04, pp-18-38
www.ijhab.com

Research Paper **Open Access**

Integrating Artificial Intelligence (AI) into EFL Writing Instruction at the Elementary Level in Bangladesh: A KAP Analysis

[1]Patrick D Costa & [2]Md Abu Yousuf

1. Teacher (English Literature and Language), European Standard School (ESS)
Email: dcostapatrick1980@gmail.com
2. Founder & Master Trainer, Lodestar Leadership Institute, Email: founder@llibd.com

Citation (APA): Costa, P. D. & Yousuf, M. A. (2026). Integrating Artificial Intelligence (AI) into EFL Writing Instruction at the Elementary Level in Bangladesh: A KAP Analysis. Vol. 4, Issue 4, pp (18-30), *IJHAB*. https://doi.org/10.5281/zenodo.24225821

Copyright *© Research Hub Bangladesh (RHB) & Author(s)*
This work is licensed under a Creative Commons Attribution 4.0 International License.

Submitted: 12/05/2026 **Accepted:** 27/10/2026 **Published**: 15/11/2026

Abstract

The use of Artificial Intelligence (AI) in language education is a great opportunity to improve educational practices, but its application at the primary level of English education in Bangladesh to enhance learners' EFL writing skills has not been explored much. The current study explored the Knowledge, Attitude, and Practice (KAP) of the primary-level English as a Foreign Language (EFL) teachers of Bangladesh toward the use of AI in teaching writing. The study used quantitative survey methodology and a pragmatic paradigm. Data were collected from in-service teachers of English for Grades 1-5 in government and registered non-government primary schools in Bangladesh. The survey instrument examined teachers' knowledge of AI tools, opinions regarding the use of AI in teaching writing, and current practice. Results show a coherent and mutually supportive KAP profile: universal awareness of AI, limited conceptual understanding, and self-assessed knowledge. Attitudes indicated a strong desire to learn and a near-consensus that AI should support and not replace instructors. Rather, classroom practice reflected this mix with low, peripheral, teacher-side AI use and the lowest means on learner-facing applications targeted by the study's pedagogical framework. The empirical evidence presented in this study on this under-researched area provides useful insights for policymakers, curriculum developers, and institutions of teacher training and education in Bangladesh and similar contexts to inform targeted professional development and strategies for the effective and equitable integration of AI in elementary education.

Keywords: Artificial Intelligence, EFL Writing, KAP Analysis, Elementary Education, Bangladesh, Teacher Professional Development

I. INTRODUCTION

As foreign language writing requires the simultaneous control of vocabulary, grammar, discourse, and idea generation in a language not fully acquired, it is one of the most difficult skills for EFL learners to master (Hyland, 2019). English is a compulsory subject in Bangladesh from the first to the last year of primary school (Grades 1-5). Hence, English occupies a prominent position in the curriculum (Ministry of Education, 2010). However, learners mostly use Bangla at home and only practice the English language in the classroom (Hamid et al., 2009). Therefore, early writing is highly dependent on teacher scaffolding and timely feedback in this context (Cameron, 2001). Studies of English teaching in Bangladesh have indicated continuing constraints in terms of low English proficiency and lack of specialist training of teachers, reliance on rote learning by students, examination-oriented methods (Hamid, 2010; Hamid & Baldauf, 2008), and a pervasive private-tutoring culture (Hamid et al., 2009). Large classes and an exam-results-oriented environment further limit the individualized feedback that writing development requires (Chowdhury & Le Ha, 2008). AI-based tools promise to solve some of these constraints that EFL teachers face in a writing class. Automated writing evaluation provides instant feedback on language form (Warschauer & Ware, 2006), chatbots provide low-anxiety conversational practice (Lin & Chang, 2020), and generative models can generate model texts, prompts, graded readers, and differentiated materials (Koraishi, 2023). There is also a wider shift in the way that learners and teachers "partner" with AI as an intelligent writing assistant (Godwin-Jones, 2022). However, there are also widespread concerns about the use of AI in the EFL classroom regarding over-reliance and reduced learner agency, inaccurate or age-inappropriate output, bias, academic integrity, and privacy of children's data (Barrot, 2023; Kasneci et al., 2023; Selwyn, 2019). UNESCO guidelines explicitly recommend age restrictions and teacher-led human-in-the-loop approaches to the use of generative AI in schools on the basis of the different developmental needs of young children as compared to adults (Miao & Holmes, 2023; UNESCO, 2021).

Bangladesh's policy environment is conducive to digital innovation: ICT in education has been promoted by the Digital Bangladesh agenda and its successor, Smart Bangladesh Vision 2041, and a national AI strategy has been drafted (ICT Division, 2020). However, the initiatives are mainly related to the economy and public services of the country (Hoque et al., 2023). The researcher has not found any national guidance specific to age on generative AI that can be used for primary classrooms. Practical conditions also vary across the country: urban and rural schools differ in terms of electricity, devices, and affordable internet (Hamid & Baldauf, 2008). Besides, generative AI tools are built primarily around English and are likely to perform less reliably in a lower-resource language such as Bangla (Hamid & Baldauf, 2008). Therefore, teachers are frequently the only decision-makers and resource persons on AI use, making their KAP study decisive in this field (Hoque et al., 2023). The KAP model, frequently used in health and education research, argues that knowledge leads to attitudes, which in turn lead to practices, while acknowledging that context mediates this relationship (Launiala, 2009). Applied here, KAP provides a diagnostic profile of teacher readiness that is actionable directly for training design for the primary EFL teachers in Bangladesh. The motivation for this study stems from four gaps. Much of the literature on AI in education is technology-driven, not educator-centred, and focuses on higher education (Zawacki-Richter et al., 2019; Chen et al., 2022). Second, the

literature on AI in language education concentrates on adolescent and adult learners (Huang et al., 2023). Little is known about whether, and how, teachers of young students adopt AI for teaching writing, especially in Bangladesh. Third, while studies of English language teaching in Bangladesh have focused on communicative language teaching, teacher capacity, and tutoring (Hamid, 2010; Hamid & Baldauf, 2008; Hamid et al., 2009), empirical evidence on the use of AI in primary classrooms is scarce, even though English is taught in a variety of school types and under unequal digital conditions. Fourth, teacher perception studies typically examine a single construct (e.g., attitude or acceptance) rather than the combined knowledge-attitude-practice profile. It is important to point out that attitude alone is a poor predictor of behavior if teachers lack knowledge or face contextual barriers (Ajzen, 1991; Ertmer & Ottenbreit-Leftwich, 2010). Without a consolidated picture of what Bangladeshi primary teachers know, believe, and do, training and policy analysis are out of sync with real needs. Hence, the study bears great significance.

II. OBJECTIVE OF THE STUDY

This study intends to examine the knowledge, attitudes and practices of primary (elementary) EFL teachers in Bangladesh concerning the integration of AI in writing instruction and to explore the factors that influence them.

III. RESEARCH METHOD

The study is conducted under a pragmatist paradigm, which seems to be appropriate for the research purpose that requires measurement (Creswell & Plano Clark, 2018), and hence the study has been conducted using a quantitative survey. The population of the study included in-service teachers teaching English in Grades 1–5 in primary schools in Bangladesh, including government primary schools and registered non-government primary schools. As English at this level is taught by generalist class teachers and English specialists, eligibility of respondents' inclusion was defined by teaching English (including writing) to at least one primary class for more than one year rather than by job title. The latest DPE school census was used as the sampling frame (DPE, 2024). From the rural and urban areas of Dhaka division, 40 primary schools were selected: 20 primary schools from the rural areas and 20 primary schools from the urban areas were randomly selected from the DPE list. From each school, 2 English language teachers were purposively selected based on their experience in teaching. The instrument designed by the researcher was grounded in TPACK, TAM/UTAUT, and AI literacy and ethics literature, which comprised three sections: Knowledge (covering AI concepts, tools for writing instruction, limitations, data privacy, and child-safety issues; attitude (5-point Likert questions on perceived usefulness, ease of use, confidence, concerns, and willingness; and practice (frequency questions on AI use for lesson planning, material creation, writing tasks, feedback, assessment, and student use). The instrument was translated forward into Bangla and English by two bilingual experts, reconciled, and back-translated independently (Brislin, 1970) and cognitively pretested with primary teachers. Data analysis was performed using SPSS 26.0 and Microsoft Excel, including descriptive statistics (frequencies, means, SDs); classification of KAP levels based on pre-defined cut-offs.

IV. FINDINGS

The survey questionnaire consisted of three parts: Knowledge of AI, attitude towards AI, and practical use of AI by the teachers in the classroom. Data were analyzed using SPSS 26.0 and Microsoft Excel, and the results of the analysis have been presented below:

Section One: Knowledge of AI

The assertions in the initial segment address the investigation of the current understanding of AI among EFL educators in elementary schools in Bangladesh. The presentation of the data analysis not only conveys the descriptive elaboration but also illustrates the insights derived from the data.

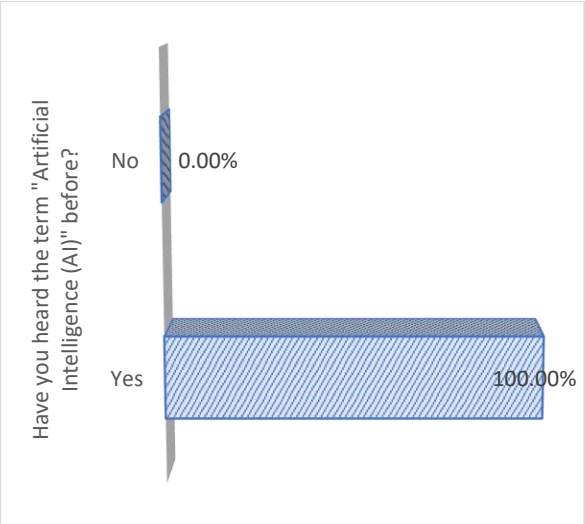


Chart 1: Familiarity with AI

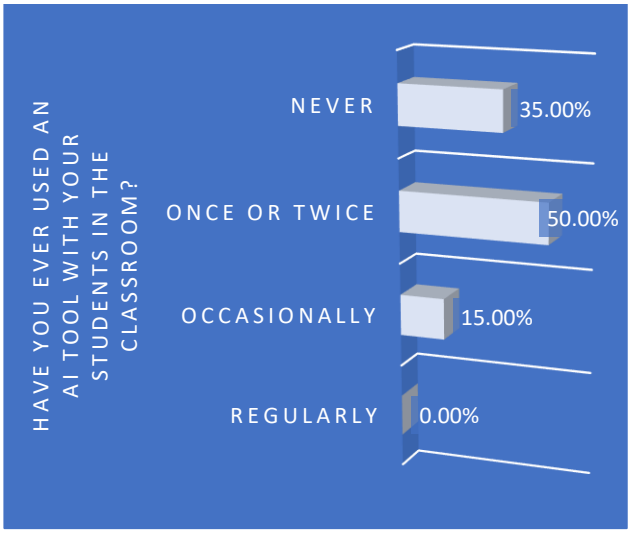


Chart 2: Use of AI in the Classroom

The findings in Table 1 are related to the basic knowledge of the participating teachers. 100% of respondents said "Yes" when asked, "Have you heard the term 'Artificial Intelligence (AI)' before?" Conversely, 0% opted for "No". The results show that the sampled EFL instructors at the primary level in Bangladesh had a total and unanimous understanding of the phrase "Artificial Intelligence". Such a fundamental level of awareness bodes well for the future incorporation of AI into writing teaching, since it lays the groundwork for more professional growth. This 100% confirmation is best described as "surface-level awareness" or "terminological familiarity." It is not a profound conceptual understanding or "knowledge" in the broadest meaning of the KAP framework. Chart 2 presents the self-reported frequency of use of an AI tool by the participating teachers with their pupils in the classroom. The other half of respondents (50.0%) report using an AI tool just "once or twice". The former group's response is best defined as a trial or exploratory activity, rather than continuous pedagogical integration. Another 15.0% report using AI "occasionally," suggesting a tiny percentage who have progressed beyond basic testing but are not yet utilizing it regularly. 65% of instructors have had some classroom experience with AI technologies, but for the great majority, this exposure is minor and sporadic. This data set highlights a huge disparity between awareness and practice when viewed in conjunction with the prior report, where 100% of instructors had heard of AI.

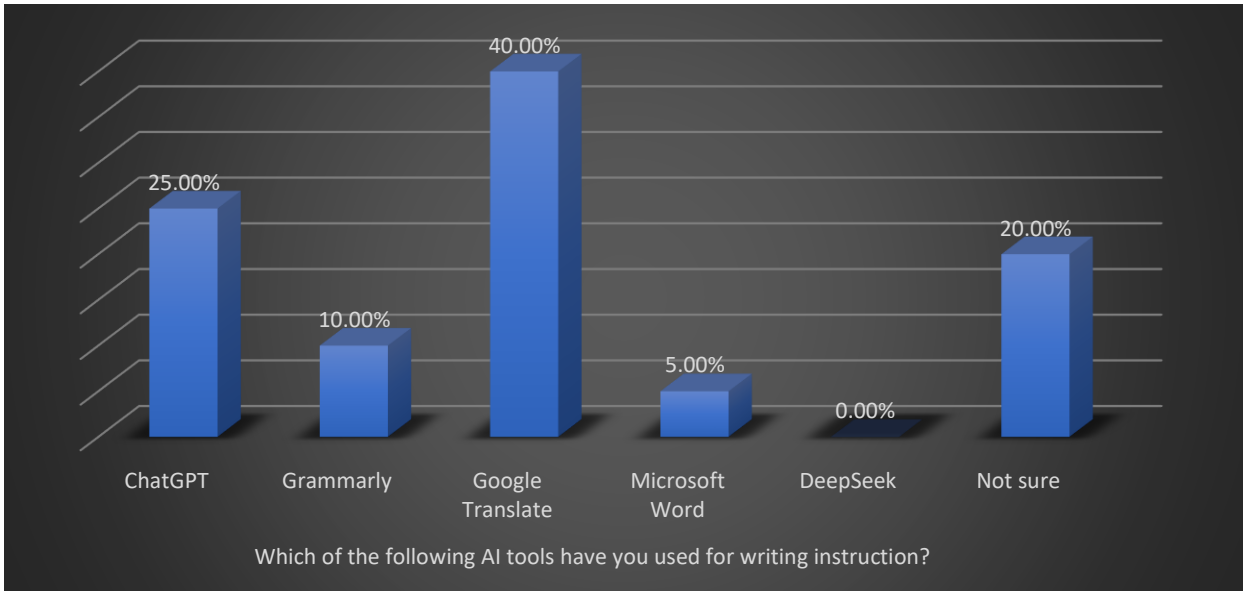
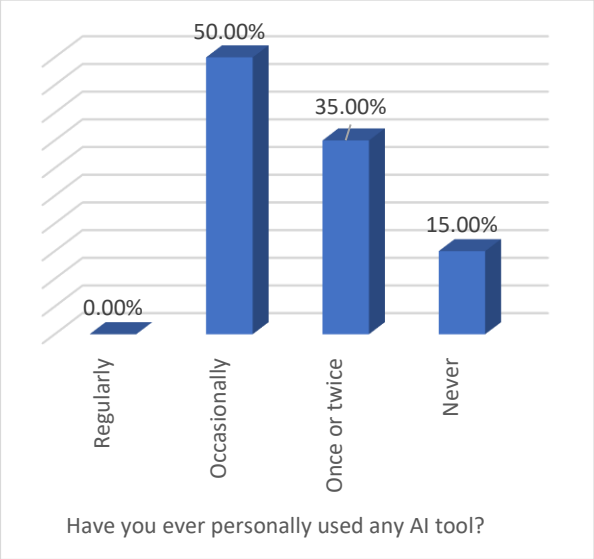


Chart 3: Specific tool use

Chart 3 displays information on the specific AI tools that participating teachers report using in their teaching of writing. Google Translate is the most cited tool (40.0%), almost two times the usage rate of ChatGPT (25.0%) and four times that of Grammarly (10.0%). This finding is very revealing of the nature of "AI use" in elementary EFL writing instruction in this context. Google Translate is a free, ubiquitous and longstanding tool that many teachers may have been using for years, often for vocabulary support or to translate instructions, without necessarily conceptualizing it as "AI." The prominence of this implies that teachers' engagement with AI is more about translation and receptiveness than generation and productivity. Interestingly, ChatGPT was used more often (25.0%) than Grammarly (10.0%), suggesting that the current conversation around generative AI is pulling teachers toward ChatGPT even without formal training.

Grammarly is a tool that is specifically designed to improve writing, such as grammar, style, and clarity, but only 10.0% of teachers use it. This low number is worrying for a study on writing instruction, because Grammarly is one of the most pedagogically direct applications of AI to improve learners' writing accuracy. The limited use of this product might be due to barriers like cost (premium version), unfamiliarity, or uncertainty of how to incorporate automated feedback into elementary level instruction. This finding strengthens the concern that AI use in this context is not yet aligned with the central goals of writing pedagogy. In sum, the data on AI tool use show a narrow and conceptually diffuse pattern of engagement. This points to the need for professional development that fosters awareness along with tool-specific pedagogical knowledge, enabling teachers to move beyond translation to generative, feedback-oriented, and process-writing applications of AI suitable for young students.



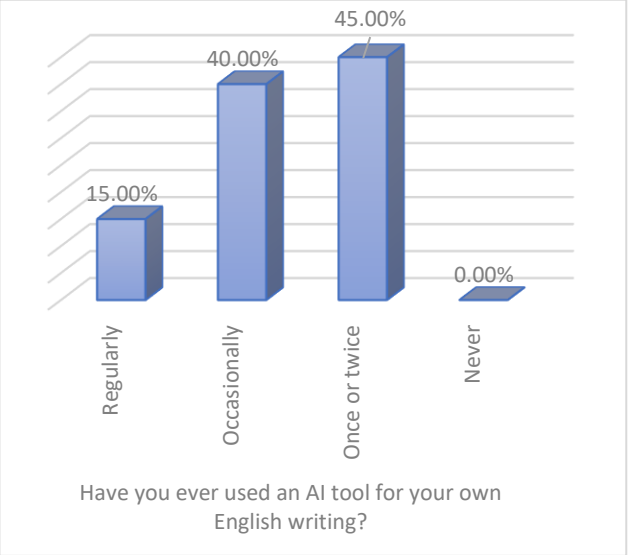


Chart 4: AI for personal use

Chart 5: AI for own writing

The data displayed in Chart 4 demonstrate the frequency with which participating teachers report having used any AI tool personally, that is, in their own capacity rather than with students in the classroom. Personal use of AI is markedly more widespread than classroom use: 50.0% of teachers report using AI occasionally in their personal capacity, compared with only 15.0% who report occasional use with students. Similarly, only 15.0% report never having used AI personally, compared with 35.0% who have never used it with students. In other words, twice as many teachers have never used AI with students as have never used it personally, and more than three times as many use it occasionally for themselves as do so with their classes. The data shown in Chart 5 present the frequency with which participating teachers report having used an AI tool for their own English writing, that is, as writers themselves rather than as instructors of writing.

This table marks the first instance in the entire Knowledge section where any respondents report regular use of AI (15.0%). Across Tables 2 and 4, regular use stood at 0.0% for both classroom and general personal use. The appearance of a regular-use cohort here is analytically significant: it suggests that when AI is applied to a concrete, personally meaningful writing task, a minority has not only adopted the tool but integrated it into habitual practice. The 0.0% "Never" response is the most striking single figure in this table and, arguably, in the entire Knowledge section. Despite the emergence of regular users, the largest single group remains those who have used AI for their own writing only "once or twice" (45.0%). Combined with the "Occasionally" group (40.0%), this means 85.0% of teachers are still in the exploratory-to-intermittent range.

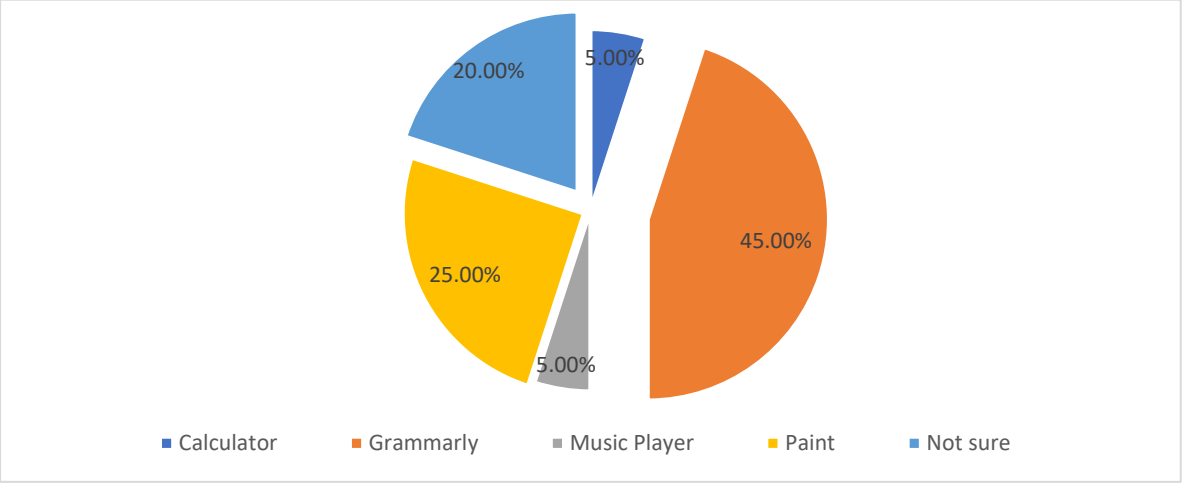


Chart 6: AI-powered tool that can help students improve their English writing

Table 6 shows the teachers' responses to an item that was designed for a factual knowledge check of the teachers, asking them to identify which of the listed tools is an AI-powered tool that can help students improve their English writing. Table 6 differs from the previous tables, which measured self-reported exposure and use, and instead directly tests conceptual knowledge: the ability to correctly identify an AI-powered writing tool. Only 45.0% of teachers chose the correct answer, 'Grammarly'. In other words, fewer than half of the sample could correctly identify an AI tool designed specifically for writing improvement. This is the most direct evidence yet in the Knowledge section that universal terminological awareness does not translate into accurate conceptual understanding. Taken together, 55.0% of teachers either selected an incorrect option (Calculator: 5.0%; Music Player: 5.0%; Paint: 25.0%) or reported being "Not sure" (20.0%). This majority failure rate is analytically significant for a KAP study, as it establishes that more than half of the sampled teachers lack the functional AI literacy needed to identify appropriate tools for writing instruction.

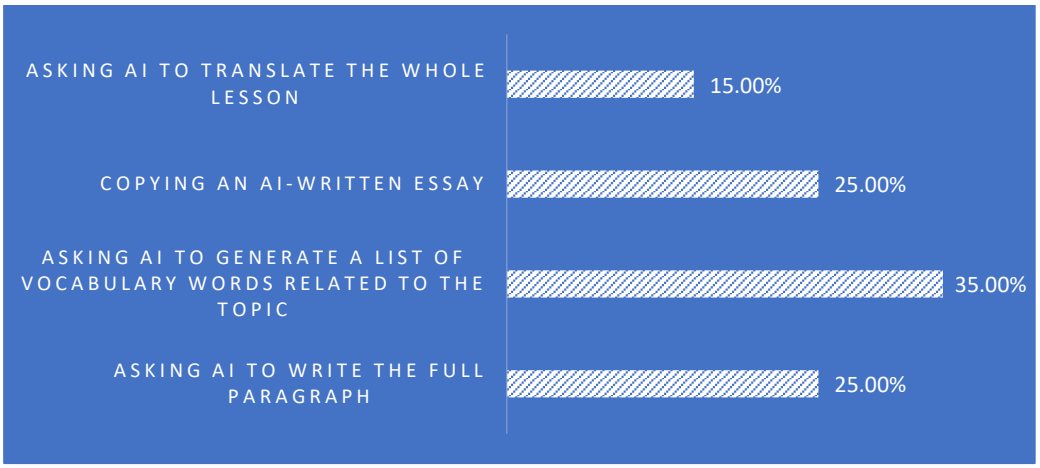
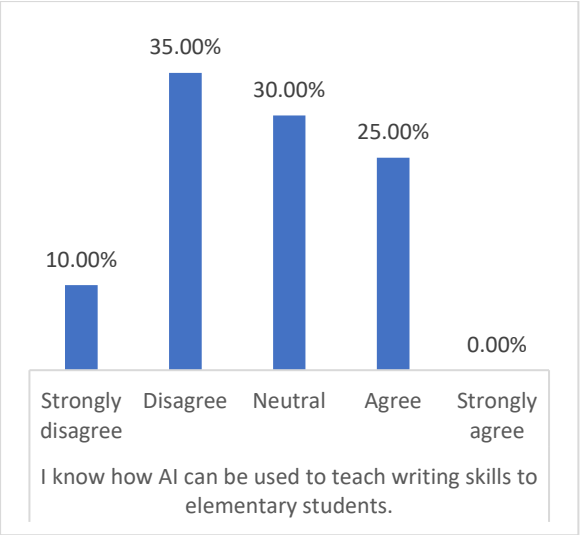


Chart 7: The BEST use of AI at the pre-writing stage?

The data presented in Chart 7 reports teachers' responses to a pedagogical knowledge item asking them to identify the best use of AI at the pre-writing (brainstorming) stage of the writing process. The correct response, asking AI to generate a topic-related vocabulary list (35.0%), was selected by just over one-third of teachers. This is the second consecutive knowledge-check item in which a majority of respondents failed to answer correctly. Together,

these two items provide converging evidence that teachers' knowledge of AI is not merely terminologically shallow but pedagogically underdeveloped: even when teachers recognize AI tools, they do not reliably understand how to deploy them appropriately within the writing process. Taken together, 65.0% of teachers chose responses that are pedagogically inappropriate for the pre-writing stage: asking AI to write the full paragraph (25.0%), copying an AI-written essay (25.0%), or translating the whole lesson (15.0%). Each of these reflects a fundamental misunderstanding of both the pre-writing stage and the role of AI within it.



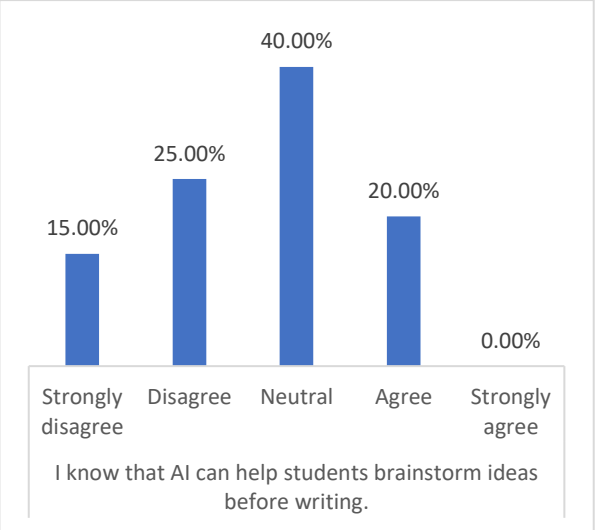


Chart 8: Knowledge of teaching with AI **Chart 9:** Help for brainstorming

Table 8: Teachers' self-assessed agreement with the statement, "I know how artificial intelligence can be used to teach writing skills to elementary students." The most striking feature of Table 8 is that not a single teacher (0.0%) strongly agreed with the statement and only 25.0% agreed. By contrast, 45.0% disagreed or strongly disagreed and 30.0% were neutral. This distribution implies that less than one-third of teachers feel confident they have the knowledge to use AI to teach writing to elementary students, and nearly half actively disclaim such knowledge. Table 9 displays data on teachers' self-reported agreement with the statement, "I know that AI can help students brainstorm ideas before writing." This item addresses a more focused and concrete knowledge claim than Table 8. It does not ask whether teachers know how to use AI for writing instruction more generally, but whether they know that AI is able to support student brainstorming specifically.

The results show a marked deficit: only 20.0% agreed with the statement, 0.0% strongly agreed, and an astonishing 40.0% were neutral; the largest neutral cluster seen anywhere in the Knowledge section. When combined with the 40.0% who disagreed or strongly disagreed (15.0% + 25.0%), the data suggest that 80.0% of teachers are unsure or do not know if standard artificial intelligence can help students generate ideas before writing. This is a fundamental gap: Brainstorming is one of the most accessible and pedagogically appropriate uses of AI in the writing classroom, especially at the elementary level, where idea generation is a key bottleneck in the writing process. The fact that four in five teachers do not claim this knowledge presents a significant limitation on their ability to meaningfully integrate AI into pre-writing instruction.

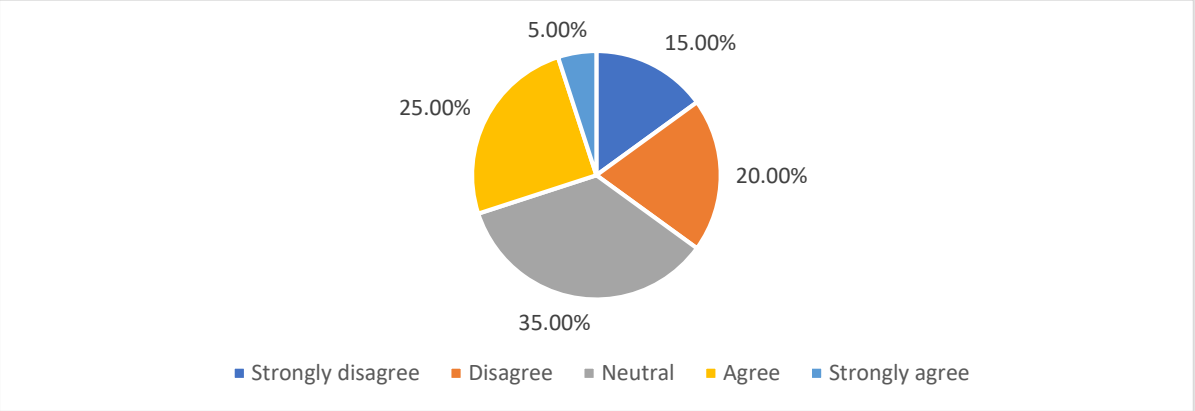


Chart 10: AI can make writing practice more engaging for young learners.

Table 10 presents the teachers' responses to the statement "AI can make writing practice more engaging for young students." Only 30.0% of the participants agreed or strongly agreed (25.0% and 5.0%, respectively) that standard artificial intelligence could make the writing practice more interesting for young students, while 35.0% of them disagreed or strongly disagreed (20.0% and 15.0%, respectively) and the other 35.0% of the participants were neutral. This is the first table in the study where positive endorsement exceeds the "strongly agree" floor (5.0%); a modest but noteworthy departure from the Knowledge section, where "strongly agree" was uniformly 0.0%. However, the overall picture is one of ambivalence: the sample is nearly evenly split between scepticism (35.0%), uncertainty (35.0%), and cautious optimism (30.0%). This triangulated distribution suggests that attitudes toward AI's motivational value are not yet consolidated; a finding consistent with the knowledge deficits documented in Tables 6–9, as teachers who lack pedagogical knowledge of AI's affordances are unlikely to have formed confident evaluative judgments about them.

Section 2: Findings related to attitude

The assertions in the second segment address the investigation of the current attitude toward AI among EFL educators in elementary schools in Bangladesh. The presentation of the data analysis not only conveys the descriptive elaboration but also illustrates the insights derived from the data.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
I know how AI can be used to teach writing skills to elementary students.	40	1	4	2.70	.966
I know that AI can help students brainstorm ideas before writing.	40	1	4	2.65	.975
I know the difference between using AI to help students learn and using AI to do the work for them.	40	1	4	2.75	.840
AI can save time in preparing English writing lessons.	40	1	4	2.95	.932
AI can help me give learners more feedback on their writing.	40	1	4	2.85	.864
AI can make writing practice more engaging for young learners.	40	1	5	2.85	1.122

Learning to use AI tools for teaching is easy for me.	40	1	4	2.25	.954
I feel confident using AI tools in my teaching.	40	1	4	2.20	.992
I am willing to learn more about using AI to teach writing.	40	2	5	4.05	.986
AI makes young learners too dependent and weakens their own writing.	40	2	5	3.70	.911
I worry about the accuracy of AI-generated content.	40	1	5	2.85	.975
AI is not suitable for primary-level learners.	40	1	5	2.75	1.193
AI should support, not replace, the teacher in teaching writing.	40	3	5	4.05	.749
Valid N (listwise)	40				

Table 1: Attitude of the teachers toward the use of AI

The descriptive statistics for the attitudinal items (N = 40) present a nuanced and internally coherent picture of elementary EFL teachers' dispositions toward AI in writing instruction. The mean scores, which range from 2.20 to 4.05 on what appears to be a five-point Likert scale, reveal a teaching force that is confident in principle but not in practice, strongly willing to learn and clear about AI's proper role, yet uncertain of its benefits, doubtful of its ease of use, and genuinely concerned about its risks for young learners. The standard deviations, most of which approach or exceed 0.90 (and reach 1.193 on the dependency item), indicate considerable attitudinal heterogeneity within the sample: teachers do not speak with one voice on AI, and any aggregate interpretation must be qualified by this internal diversity.

The most striking feature of the data is the sharp contrast between the knowledge and self-efficacy items and the willingness items. The four items assessing perceived knowledge and confidence all cluster at the lower end of the scale: "I feel confident using AI tools in my teaching" records the lowest mean in the entire set (M = 2.20, SD = 0.992), followed closely by "Learning to use AI tools for teaching is easy for me" (M = 2.25, SD = 0.954). The knowledge items similarly fall below the midpoint; "I know that AI can help students brainstorm ideas before writing" (M = 2.65, SD = 0.975), "I know how AI can be used to teach writing skills to elementary students" (M = 2.70, SD = 0.966), and "I know the difference between using AI to help students learn and using AI to do the work for them" (M = 2.75, SD = 0.840), as do the perceived-benefit items for lesson preparation (M = 2.95, SD = 0.932), feedback (M = 2.85, SD = 0.864), and engagement (M = 2.85, SD = 1.122).

Notably, the engagement item is the only one in the set with a maximum of 5, indicating that at least one teacher strongly endorsed AI's motivational value, and its standard deviation of 1.122 is among the highest, signalling deep division on this question. Collectively, these scores align closely with the frequency data from the Knowledge section and corroborate the study's central finding: teachers neither feel they understand AI's pedagogical applications nor find the technology easy or confidence-inspiring to use. Critically, the "difference between helping students learn and doing the work for them" item (M = 2.75) suggests that even the conceptual distinction between AI as scaffold and AI as substitute, a distinction central to sound writing pedagogy, is not securely grasped, which helps explain the substitution-oriented preferences observed in the earlier pedagogical knowledge check.

By contrast, the items capturing willingness, role clarity, and concern sit at the upper end of the scale and reveal a markedly more favourable disposition. "I am willing to learn more about

using AI to teach writing" (M = 4.05, SD = 0.986) and "AI should support, not replace, the teacher in teaching writing" (M = 4.05, SD = 0.749) are the joint-highest means in the set, and the latter's relatively low standard deviation (the lowest in the entire table) indicates a rare point of near-consensus: teachers overwhelmingly agree that AI's proper role is supplementary rather than substitutive. This is an encouraging finding, as it suggests that teachers' pedagogical instincts align with sound integration principles even where their technical knowledge is weak. At the same time, the two concern items record substantial means: "AI makes young learners too dependent and weakens their own writing" (M = 3.70, SD = 0.911) and "AI is not suitable for primary-level learners" (M = 2.75, SD = 1.193). The dependency concern is particularly notable, it ranks third-highest among all items and well above the midpoint, indicating that teachers' reservations about AI are not diffuse technophobia but specific, developmentally grounded worries about young learners' writing development.

Section 3: Findings related to practice

The assertions in the third segment address the investigation of the current practice of AI among EFL educators in elementary schools in Bangladesh. The presentation of the data analysis not only conveys the descriptive elaboration but also illustrates the insights derived from the data.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
I use AI tools to plan English writing lessons.	40	1	5	2.50	1.132
I use AI to create model texts, examples, or worksheets for writing.	40	1	5	2.50	1.132
I use AI to create writing prompts or topics suited to my learners' level.	40	1	4	2.45	.932
I use AI to check grammar or spelling in my own materials.	40	1	5	3.15	1.252
I use AI to help me give feedback on learners' writing.	40	1	5	2.20	1.137
I use AI to assess or grade learners' writing.	40	1	5	2.20	1.137
I use AI to translate between Bangla and English when teaching.	40	1	5	2.50	1.132
I let learners use AI tools for writing tasks, in class or at home.	40	1	5	2.20	1.137
I teach learners that AI output can be wrong and must be checked.	40	1	5	3.15	1.252
I discuss AI use with colleagues or my head teacher.	40	1	5	3.15	1.252
Valid N (listwise)	40				

Table 2: Practical use of AI in the classroom

The descriptive statistics for the practice items (N = 40) present a picture of elementary EFL teachers whose engagement with AI in writing instruction is, at best, occasional, fragmented, and largely peripheral to the core acts of teaching writing. The mean scores range from 2.20 to 3.15 on a five-point scale, with every single item falling at or below the midpoint of 3.15, a pattern that indicates no practice is routinely enacted by the sample as a whole. The standard deviations are uniformly large, ranging from 0.932 to 1.252, and every item except one (writing prompts, maximum 4) spans the full 1–5 range. This dispersion is analytically important: it indicates that the sample is not uniformly non-adopting but rather polarized,

containing a minority of relatively active AI users alongside a substantial group of non-users. The aggregate means therefore describe a norm of infrequent use while concealing a bimodal reality; a point the article should emphasize, as it suggests that the barrier to practice is not universal resistance but differential access to knowledge, confidence, and opportunity.

The highest means in the set cluster around adjacent, preparatory, and safeguarding activities rather than direct instructional use. Three items share the highest mean of 3.15: "I use AI to check grammar or spelling in my own materials" (SD = 1.252), "I teach learners that AI output can be wrong and must be checked" (SD = 1.252), and "I discuss AI use with colleagues or my head teacher" (SD = 1.252). The identity of these three means is itself instructive. Teachers are most likely to use AI for proofreading their own materials; an adult, personal, low-stakes application consistent with the Knowledge section's finding that 100% of teachers had used AI for their own English writing, and to engage in critical literacy instruction about AI's fallibility, as well as collegial discussion about AI. The items representing direct instructional use of AI with learners sit at the very bottom of the distribution. "I use AI to help me give feedback on learners' writing" (M = 2.20, SD = 1.137), "I use AI to assess or grade learners' writing" (M = 2.20, SD = 1.137), and "I let learners use AI tools for writing tasks, in class or at home" (M = 2.20, SD = 1.137) share the lowest mean in the entire practice set. That learners are seldom permitted to use AI tools is perhaps the most consequential finding in the section, as it indicates that whatever AI experience students are gaining, it is not occurring under teacher supervision in the writing classroom. The low means for feedback and assessment are equally significant: these are among the most widely promoted and readily available applications of AI in writing instruction, yet teachers report infrequent use.

The planning and materials-preparation items occupy the middle of the distribution. "I use AI tools to plan English writing lessons" (M = 2.50, SD = 1.132), "I use AI to create model texts, examples, or worksheets for writing" (M = 2.50, SD = 1.132), and "I use AI to translate between Bangla and English when teaching" (M = 2.50, SD = 1.132) all sit at the same mean and standard deviation, while "I use AI to create writing prompts or topics suited to my learners' level" is the lowest of this cluster (M = 2.45, SD = 0.932) and the only item with a maximum of 4. The translation item's position here is notable given the Knowledge section's finding that Google Translate was the most commonly used tool (40.0%): translation appears to function as a general-purpose support rather than a writing-instruction strategy, and its middling mean suggests it is used inconsistently even for that purpose. The prompt-generation item's comparatively low mean and restricted range (maximum 4) suggest that differentiating AI-generated tasks to learners' level, a pedagogically demanding application, is rarely attempted, which aligns with the low self-assessed pedagogical knowledge reported in the attitude section. Taken together, these planning items indicate that where AI enters instruction at all, it does so as a teacher-side productivity aid for preparation rather than as a learner-facing pedagogical tool.

V. DISCUSSION

The purpose of the present study was to investigate the knowledge, attitude, and practice (KAP) of elementary EFL teachers toward the integration of Artificial Intelligence (AI) in writing instruction in Bangladesh. The findings indicate a systematic and mutually reinforcing pattern across the three KAP dimensions: universal awareness of AI, but limited conceptual and pedagogical knowledge; cautious and conditional attitudes characterized by a high willingness to

learn but low confidence; and infrequent, peripheral, teacher-side practice constrained by systemic barriers. The most clear-cut and consistent finding of the study is the gaps between knowledge of terminology and functional knowledge. Although all the teachers surveyed had heard the term "AI," only 45.0% could identify an AI-powered writing tool correctly (Presented in Chart 6), only 35.0% could identify a proper pre-writing use of AI (Presented in Chart 7), and only 25.0% agreed that they knew how to use AI to teach writing to elementary students (Presented in Chart 8). This pattern is consistent with the broader literature on teachers' technological knowledge, which has repeatedly documented that familiarity with a technology's name is not always consistent with the pedagogical content knowledge (PCK) needed to materialize it instructionally (Mishra & Koehler, 2006; Koehler & Mishra, 2009). This finding is consistent with research on AI awareness in developing educational contexts, which reports high general awareness and low specific and applied knowledge (Vincent-Lancrin & Van Der Vlies, 2020; Chen et al., 2020), and with research specifically on language teachers, which finds that awareness of AI tools is higher than knowledge of their pedagogical affordances (Pokrivcakova, 2019; Kim & Kim, 2020).

The findings on attitudes paint a rather more positive but still confusing picture. Teachers were very willing to learn about AI (M = 4.05) and almost unanimously agreed that AI should support rather than replace teachers (M = 4.05), but had low confidence in using AI tools (M = 2.20) and moderate-to-high concern about learner dependency (M = 3.70). This configuration-high willingness, low confidence, and moderate concern, best describes conditional willingness and is consistent with the technology acceptance studies, which identify perceived ease of use and self-efficacy as primary determinants of technology adoption along with perceived usefulness (Davis, 1989; Vincent-Lancrin & Van Der Vlies, 2020). The most important finding regarding attitudes from the study is the gap of almost two points between willingness (4.05) and confidence (2.20). This implies that integration is hindered by a capability gap, not a motivational one, a difference that has direct implications for designing interventions because it suggests that teachers need to be equipped to use AI rather than convinced of its relevance. The dependency concern (M = 3.70) should be read with caution. The teachers' concerns were not reflective of technophobia or resistance to innovation but were developmentally specific to children's foundational writing development. One study found that at the primary level, children are just learning to write: They will never learn if the computer writes for them (Chan & Tsi, 2024). This finding is consistent with developmental perspectives on writing instruction that emphasize that basic writing skills are learned through effortful practice and that scaffolding must be calibrated to avoid displacing the cognitive work of learning (Graham et al., 2015; Alam et al., 2024). This also reflects the increasing concerns in the AI-in-education literature on over-reliance and the need to preserve learner agency (Kasneci et al., 2023; Dwivedi et al., 2023). But the teachers' concerns were not rejections of AI; they were criteria for acceptable use. There is strong agreement that AI is supportive (M = 4.05), providing the normative basis for pedagogically sound integration, and supporting the notion of "AI as assistant, not replacement" highlighted in recent educational guidance (Holmes et al., 2022; UNESCO, 2023).

But perhaps the most sobering are the findings from practice. The sample did not routinely enact any of the practices (all means ≤ 3.15), with the lowest means being squarely on learner-facing applications: AI-supported feedback (M = 2.20), AI-assisted assessment (M = 2.20), and allowing learners to use AI tools (M = 2.20). The highest means were for teacher-side and normative activities: checking own materials (M = 3.15), teaching learners to check AI

output (M = 3.15), and discussing AI with colleagues (M = 3.15). This pattern of peripheral rather than pedagogical use is consistent with the broader literature on teachers' technology integration, which documents a persistent gap between personal and instructional use, and a tendency for early adoption to focus on productivity applications rather than pedagogical transformation (Ertmer, 2005; Abedi et al., 2023). It also particularly resonates with findings on AI in language education, where teachers report using AI for preparation and self-editing far more than for learner-facing instruction (Pokrivcakova, 2019; Godwin-Jones, 2022). The nature of current practice is also further characterized by the centrality of translation in the teachers' toolbox of resources. Translation is a comprehension-based use of AI rather than a production-based one, and its prominence is likely a product of both its accessibility and its amenability to the linguistic realities of Bangladeshi EFL classrooms, where the Bangla-English gap is a salient instructional challenge. Yet, translation does little to advance the composing, drafting, and revising skills that are central to writing pedagogy, and its prevalence suggests that teachers' engagement with AI is not yet oriented toward the central goals of writing instruction. This finding is consistent with Godwin-Jones's (2022) observation that language teachers' initial use of AI is more likely to be translation and grammar checking rather than process-writing applications, and highlights the need for training that broadens teachers' repertoires toward generative, feedback-oriented, and process-oriented uses. This study's findings provide empirical support for the KAP framework's premise that knowledge, attitude, and practice are interrelated. The data reveal a tight coupling of knowledge and attitude, where positive attitudes (30.0%) are roughly in line with self-assessed knowledge (25.0%, Table 8), indicating that knowledge influences attitude, a relationship well documented in the health and educational behavior literature (Lizam et al., 2026; Siddiki et al., 2025). The coupling of attitude and practice is similarly evident. Strong willingness (M = 4.05) coexists with minimal practice (all means ≤ 3.15). Willingness alone is not enough without the knowledge, confidence, and institutional enablement that practice requires.

This pattern supports the interpretation that the KAP dimensions operate as a chain of enablement, rather than independently: knowledge enables confident attitudes which in turn enable practice, but only when contextual conditions allow. The study thus adds to the KAP literature by showing in a poorly researched context that the KAP chain can be broken at the knowledge and capability links despite the strength of the attitudinal link. The findings also relate to the TPACK framework (Mishra & Koehler, 2006; Koehler & Mishra, 2009), which states that effective technology integration requires the intersection of technological, pedagogical, and content knowledge. The teachers in this study have emergent technological knowledge, but do not have pedagogical knowledge of how to deploy those tools to support writing instruction, a deficit at the very intersection that TPACK identifies as decisive. The substitution mindset in Table 7 and the peripheral practice pattern in the practice data are both manifestations of weak TPACK, not weak technological knowledge per se, and so the study's professional development recommendations should be articulated in TPACK terms: training needs to integrate technological, pedagogical, and content knowledge rather than treat AI as a standalone technical skill.

VII. RECOMMENDATIONS

The findings of this KAP study converge on a clear diagnosis: elementary EFL teachers in Bangladesh are universally aware of AI and strongly willing to learn, but they lack the

conceptual and pedagogical knowledge, the confidence, and the institutional enablement needed to integrate AI meaningfully into writing instruction. The study's findings make the overall recommendation clear: AI integration in elementary EFL writing instruction in Bangladesh should proceed not by promoting AI adoption per se, but by building the knowledge, confidence, and institutional conditions that make pedagogically sound adoption possible. Teachers are willing; the task is to equip them. The further recommendations include policy clarity, practical training, repertoire expansion, infrastructure equity, curriculum–assessment alignment, and institutional capacity-building, which are mutually dependent and should be pursued as an integrated programme rather than as isolated initiatives. Implemented together and sequenced appropriately, they offer a feasible, context-sensitive pathway toward AI-supported writing instruction that preserves the teacher's central role, safeguards young learners' development, and treats teachers' conditional willingness as the resource it is.

VII. CONCLUSION

The findings of this study converge on a single overarching conclusion: the barrier to AI integration in elementary EFL writing instruction in Bangladesh is not awareness, which is universal, nor willingness, which is strong, but capability, confidence, and institutional enablement, all of which are low. Teachers know the name of AI but not its pedagogy; they are willing to learn but lack confidence and fear dependency for young learners; they use AI for themselves but not for teaching writing; and they face material, policy, and structural constraints that no individual effort alone can overcome. This conclusion is consistent with, and extends, the existing literature on teacher technology integration and AI in language education, and it supports the KAP framework's premise that knowledge, attitude, and practice must be developed together rather than sequentially.

REFERENCES

Abedi, E. A., Prestridge, S., & Hodge, S. (2023). Teachers' beliefs about technology integration in Ghana: a qualitative study of teachers', headteachers' and education officials' perceptions. *Education and Information Technologies, 29*(5), 5857–5877. https://doi.org/10.1007/s10639-023-12049-0

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179–211.

'Alam, G. F., Wiyono, B. B., Burhanuddin, B., Muslihati, M., & Mujaidah, A. (2024). Artificial intelligence in education world: opportunities, challenges, and future research recommendations. *Fahima, 3*(2), 223–234. https://doi.org/10.54622/fahima.v3i2.350

Barrot, J. S. (2023). Using ChatGPT for second language writing: Pitfalls and potentials. *Assessing Writing, 57*, Article 100745.

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural*

Psychology, 1(3), 185–216.

Cameron, L. (2001). *Teaching languages to young learners*. Cambridge University Press.

Chan, C. K. Y., & Tsi, L. H. (2024). Will generative AI replace teachers in higher education? A study of teacher and student perceptions. *Studies in Educational Evaluation, 83*, 101395. https://doi.org/10.1016/j.stueduc.2024.101395

Chen, X., Zou, D., Xie, H., Cheng, G., & Liu, C. (2022). Two decades of artificial intelligence in education: Contributors, collaborations, research topics, challenges, and future directions. *Educational Technology & Society, 25*(1), 28–47.

Chen, L., Chen, P., & Lin, Z. (2020). Artificial Intelligence in Education: a review. *IEEE Access, 8*, 75264–75278. https://doi.org/10.1109/access.2020.2988510

Chowdhury, R., & Le Ha, P. (2008). Reflecting on western TESOL training and communicative language teaching: Bangladeshi teachers' reflections. *Asia Pacific Journal of Education, 28*(3), 305–316.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum.

Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319–340. https://doi.org/10.2307/249008

Directorate of Primary Education. (2024). *Annual primary school census* [insert latest edition and URL]. Ministry of Primary and Mass Education, Government of the People's Republic of Bangladesh.

Dwivedi, Y. K., Kshetri, N., Hughes, L., Slade, E. L., Jeyaraj, A., Kar, A. K., Baabdullah, A. M., Koohang, A., Raghavan, V., Ahuja, M., Albanna, H., Albashrawi, M. A., Al-Busaidi, A. S., Balakrishnan, J., Barlette, Y., Basu, S., Bose, I., Brooks, L., Buhalis, D., . . . Wright, R. (2023). Opinion Paper: "So what if ChatGPT wrote it?" Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for

research, practice and policy. *International Journal of Information Management*, *71*(71), 102642. https://doi.org/10.1016/j.ijinfomgt.2023.102642

Ertmer, P. A., & Ottenbreit-Leftwich, A. T. (2010). Teacher technology change: How knowledge, confidence, beliefs, and culture intersect. *Journal of Research on Technology in Education*, *42*(3), 255–284.

Ertmer, P. A. (2005). Teacher pedagogical beliefs: The final frontier in our quest for technology integration? *Educational Technology Research and Development*, *53*(4), 25–39. https://doi.org/10.1007/bf02504683

Godwin-Jones, R. (2022). Partnering with AI: Intelligent writing assistance and instructed language learning. *Language Learning & Technology*, *26*(2), 5–24. https://doi.org/10.64152/10125/73474

Graham, S., Hebert, M., & Harris, K. R. (2015). Formative Assessment and Writing: A Meta-Analysis. *The Elementary School Journal*, *115*(4), 523–547. https://doi.org/10.1086/681947

Hamid, M. O. (2010). Globalisation, English for everyone and English teacher capacity: Language policy discourses and realities in Bangladesh. *Current Issues in Language Planning*, *11*(4), 289–310.

Hamid, M. O., & Baldauf, R. B., Jr. (2008). Will CLT bail out the bogged down ELT in Bangladesh? *English Today*, *24*(3), 16–24.

Hamid, M. O., Sussex, R., & Khan, A. (2009). Private tutoring in English for secondary school students in Bangladesh. *TESOL Quarterly*, *43*(2), 281–308.

Hoque, M. S., Islam, M. M., & Hamid, M. O. (2023). Promises of English and English language learners in rural Bangladesh. *The Journal of AsiaTEFL*, *20*(1), 31–46. https://doi.org/10.18823/asiatefl.2023.20.1.3.31

Holmes, W., Porayska-Pomsta, K., Holstein, K., Sutherland, E., Baker, T., Shum, S. B., Santos, O. C., Rodrigo, M. T., Cukurova, M., Bittencourt, I. I., & Koedinger, K. R. (2021). Ethics of AI in Education: Towards a Community-Wide framework. *International Journal of*

Artificial Intelligence in Education, *32*(3), 504–526. https://doi.org/10.1007/s40593-021-00239-1

Huang, X., Zou, D., Cheng, G., Chen, X., & Xie, H. (2023). Trends, research issues and applications of artificial intelligence in language education. *Educational Technology & Society*, *26*(1), 112–131.

Hyland, K. (2019). *Second language writing* (2nd ed.). Cambridge University Press.

Hyland, K., & Hyland, F., (2006). *Feedback in second language writing: Contexts and issues*. Cambridge University Press.

ICT Division. (2020). *National strategy for artificial intelligence – Bangladesh* [Draft; verify current title, version, and URL]. Government of the People's Republic of Bangladesh.

Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günnemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeffer, J., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., . . . Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, *103*, 102274. https://doi.org/10.1016/j.lindif.2023.102274

Koraishi, O. (2023). Teaching English in the age of AI: Embracing ChatGPT to optimize EFL materials and assessment. *Language Education and Technology*, *3*(1), 55–72.

Koehler, M. J., Mishra, P., & Cain, W. (2013). What is Technological Pedagogical Content Knowledge (TPACK)? *Journal of Education*, *193*(3), 13–19. https://doi.org/10.1177/002205741319300303

Launiala, A. (2009). How much can a KAP survey tell us about people's knowledge, attitudes and practices? Some observations from medical anthropology research on malaria in pregnancy in Malawi. *Anthropology Matters*, *11*(1), 1–13.

Lin, M. P.-C., & Chang, D. (2020). Enhancing post-secondary writers' writing skills with a chatbot. *Educational Technology & Society*, *23*(1), 78–92.

Lizam, L. I., Zaini, K. N. I., Zainal, M. Z., & Tajari, A. (2026). Knowledge, Attitude, and Practice (KAP) of online learning among higher learning institutions' students in Sabah.

International Journal of Research and Innovation in Social Science, *10*(8), 76400–76540. https://doi.org/10.47772/ijriss.2026.1026edu0563

Miao, F., & Holmes, W. (2023). *Guidance for generative AI in education and research*. UNESCO.

Ministry of Education. (2010). *National education policy 2010*. Government of the People's Republic of Bangladesh.

Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: a framework for teacher knowledge. *Teachers College Record the Voice of Scholarship in Education*, *108*(6), 1017–1054. https://doi.org/10.1177/016146810610800610

Pokrivcakova, S. (2019). Preparing teachers for the application of AI-powered technologies in foreign language education. *Journal of Language and Cultural Education*, *7*(3), 135–153. https://doi.org/10.2478/jolace-2019-0025

Siddiki, M. S., Mondal, R. S., Bhuiyan, M. N. A., Kamruzzaman, M., & Saha, S. (2025). Assessment the knowledge, attitudes, education, knowledge, attitude and practices toward artificial intelligence. *Journal of Business and Management Studies*, *7*(5), 106–116. https://doi.org/10.32996/jbms.2025.7.5.9

Selwyn, N. (2019). *Should robots replace teachers? AI and the future of education*. Polity Press.

UNESCO. (2021). *AI and education: Guidance for policy-makers*. UNESCO.

Vincent-Lancrin, S., & Van Der Vlies, R. (2020). Trustworthy artificial intelligence (AI) in education: Promises and challenges. In *OECD Education Working Papers*. https://doi.org/10.1787/a6c90fa9-en

Warschauer, M., & Ware, P. (2006). Automated writing evaluation: Defining the classroom research agenda. *Language Teaching Research*, *10*(2), 157–180.

Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education: Where are the educators? *International Journal of Educational Technology in Higher Education*, *16*, Article 39.


IJHAB
INTERNATIONAL
JOURNAL OF HUMANITIES
ARTS AND BUSINESS