ATTITUDES AND MOTIVATION FOR LEARNING ENGLISH WITH TECHNOLOGY-ENHANCED INSTRUCTION AMONG HIGH SCHOOL STUDENTS

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ABSTRACT

This study examines attitudes and motivation for learning English with technology-enhanced instruction among high school students in Uzbekistan. A quasi-experimental design with 370 students (grades 10–11) from secondary schools in Khorezm, Kashkadarya and Tashkent compared an experimental group (n = 185) using an author-developed digital homework application based on Prepare Grade 10/11 Workbooks and online resources with a control group (n = 185) receiving traditional textbook instruction. Motivation was assessed via a four-criterion scale (cognitive interest, lesson participation, stability of motivation, willingness to use digital tools; each 0–3; total 0–12; Cronbach's α = 0.84). Pre- and post-test data were analysed with paired and independent-samples t-tests. Results showed statistically significant gains in the experimental group on total motivation score Homework completion with digital tools rose from 28% to 61% in the experimental group. Semi-structured interviews with 24 students and 6 teachers corroborated quantitative findings, revealing themes of increased autonomy, task value and self-efficacy. The study supports hybrid teacher-plus-technology models and calls for longitudinal research with standardised instruments.

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Introduction

English learning in Uzbek school systems is situated within broader developments in foreign language education and changing socio-cultural conditions. In schools in Uzbekistan, attention has often focused on grammar and vocabulary, receptive and productive skills, yet these studies provide an important template for understanding how compulsory and optional language provision, curricular structures, and autonomy support shape adolescents' motivational profiles. Work with secondary learners in Uzbekistan shows that motivation for language learning is closely tied to perceptions of teacher autonomy support and to curriculum policies that provide meaningful choice, with motivation declining as students progress through year groups and perceive reduced autonomy in later compulsory years (Parrish et al., 2024). Such findings underscore how institutional arrangements and classroom practices can either sustain or erode willingness to engage with language learning across secondary education.

Conceptual work on motivation in language education characterises motivation as complex, dynamic, and embedded in life orientation and self-determination rather than as a static trait. Motivation is framed as the underlying force that guides individual, social, and professional practices, and in teaching English as a Foreign Language it is directly linked to students' motives and enjoyment in participating in learning activities. This perspective highlights students' willingness to immerse themselves in learning as

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central to navigating the challenges of acquiring a second or foreign language, and emphasises that motivation is intertwined with learning engagement and shapes how learners pursue and achieve academic goals (Dörnyei & Ushioda, 2010; Phan, 2025). In high school EFL settings, motivation can therefore be understood as the set of motives driving students to learn English in order to enhance academic performance and outcomes, as English is one of the core subjects while passing the entrance exams in higher educational institutions in Uzbekistan.

Technology use in high school English classrooms can be examined through functional classifications of tools and pedagogical integration levels. One review groups educational technologies into eight categories based on their functions: collaborative tools that support co-editing and information sharing, social tools that enable synchronous or asynchronous communication with text, audio, and video, creative tools for producing digital stories or videos, learning management systems that integrate activities and resources, classroom interaction tools for quizzes and polling, multimedia materials as audio and video resources, and presentation tools for digital display of content (Shadiev & Wang, 2022). Within language learning, mobile applications such as Duolingo and Ibrat Academy for local learners provide structured practice in listening, writing, reading, and speaking, often using immersive techniques, adaptive recall, and speech recognition to support pronunciation and concept retention. Alongside apps, online language courses and language exchange platforms extend technology integration by offering performance-based tasks aligned with language standards and by creating social spaces in which learners interact with proficient speakers through chat, email, or phone across defined modes of interaction (Kakembo, 2024).

Production-oriented activities play a central role in many technology-supported EFL environments. Creative work-based language learning tasks frequently revolve around creating digital stories or videos, typically involving group communication about the project, information collection and processing, authoring of the story or script, and sharing and discussion of the resulting products. These activities draw on tools such as Photo Story, Windows Movie Maker, iMovie, Prezi, blogs, and classroom management platforms and are associated with development of communication, collaboration, creativity and innovation, problem solving, critical thinking, digital literacy, and social and cross-cultural interaction, alongside improvements in language skills including speaking, listening, reading, writing, vocabulary and grammar (Shadiev & Wang, 2022).

Methods

Research Design

The study employed a quasi-experimental pre-test/post-test control-group design combined with a qualitative component. The quantitative strand tested the effectiveness of a developed methodology for fostering motivation to learn English among students in grades 10–11 based on the integration of an author-developed digital application for homework (aligned with Prepare Grade 10 and Grade 11 Workbooks) and selected online resources. The qualitative strand used semi-structured interviews to explore students' and teachers' perceptions of the intervention. The experiment consisted of three stages: ascertaining (pre-test), forming (intervention), and controlling (post-test).

Participants

The study was conducted in secondary schools of the Republic of Uzbekistan (Khorezm region, Kashkadarya region and the city of Tashkent). A total of 370 students in grades 10–11, aged 16–17, participated. Students were assigned to experimental (EG) and control (CG) groups as shown in Table 1. The sample included students with varying levels of academic achievement and initial motivation, supporting representativeness.

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Table 1

Distribution of Participants by Grade and Group

Grade	Experimental Group (EG)	Control Group (CG)	Total
Grade 10	120	115	235
Grade 11	65	70	135
Total	185	185	370

Note. EG = experimental group; CG = control group.

The experimental groups were trained using the developed methodology, which included the author's digital application for homework based on Prepare Grade 10/11 Workbooks and supplementary online resources (Kahoot, Quizlet, Bamboozle and selected multimedia materials). The control groups followed the traditional methodology using the Prepare Grade 10/11 Student Books and Workbooks without systematic digital technology integration.

Instruments

Motivation was measured with a researcher-developed four-criterion scale (Table 2). Each criterion was scored on a 0–3 point scale; the total motivation score ranged from 0 to 12. Score interpretation: 0–3 = low motivation, 4–6 = medium-low, 7–9 = medium-high, 10–12 = high motivation. Internal consistency reliability for the scale in the present sample was Cronbach's $\alpha = 0.84$ (pre-test) and $\alpha = 0.87$ (post-test), indicating acceptable to good reliability. Content validity was established through expert review by three university specialists in EFL methodology and educational psychology. A short questionnaire containing both closed and open-ended items was administered via Google Forms to assess technical readiness, interest in lessons, and attitudes toward digital technologies. Cognitive and emotional components of motivation were targeted.

Table 2

Criteria for Assessing the Level of Student Motivation

Criterion	Description	Point scale
Cognitive interest	Showing interest in learning new material and exploring English beyond compulsory tasks	0–3
Participation in the lesson	Active participation in group and pair work, discussions and oral tasks	0–3
Stability of motivation	Persistence of interest and effort over an extended period	0–3
Use of digital tools	Willingness and actual use of the digital application, Kahoot, Quizlet, Bamboozle and related tools	0–3

In addition, the proportion of homework assignments completed with digital technology was recorded at pre- and post-test. Semi-structured interviews were conducted with a purposive subsample of 24 students (12 EG, 12 CG; balanced by grade and achievement level) and 6 teachers who implemented the intervention. Interviews lasted 25–40 minutes, were audio-recorded with permission, conducted in the participants' first language (Uzbek or Russian), transcribed, translated into English, and subjected to member checking. Investigator triangulation and peer debriefing were used to enhance credibility. Thematic analysis followed the recursive stages described by Braun and Clarke (familiarisation, coding, theme generation, review, definition and naming, and report production).

Procedure and Data Analysis

Before the intervention, a readiness survey confirmed that all experimental-group students possessed personal mobile devices and internet access and expressed willingness to use the digital application. The ascertaining stage established baseline motivation and knowledge levels. The forming

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stage lasted one academic term (approximately 12–14 weeks). The controlling stage repeated the motivation assessment and recorded digital homework completion rates. Quantitative data were analysed with paired-samples t-tests (within-group change) and independent-samples t-tests (between-group differences) using SPSS 26. Effect sizes were reported as Cohen's d. Significance was set at α = .05 (two-tailed). Qualitative data were analysed thematically as described above.

Results

Quantitative Findings

All experimental-group students reported technical and psychological readiness for the digital intervention. Pre-test total motivation scores did not differ significantly between groups (EG: $M = 5.82$, $SD = 1.94$; CG: $M = 5.76$, $SD = 1.89$; $t(368) = 0.30$, $p = .764$), confirming baseline equivalence.

At post-test the experimental group showed a large and statistically significant increase in total motivation score (Table 3). The control group exhibited a small but statistically significant increase, attributable to normal instructional experience over the term. The between-group difference at post-test was highly significant and of large effect size.

Table 3

Pretest and Posttest Total Motivation Scores (0–12 Scale)

Group	Pre-test *M* (*SD*)	Post-test *M* (*SD*)	*t* (*df*)	*p* / Cohen's *d*
EG (*n* = 185)	5.82 (1.94)	9.41 (1.67)	21.36 (184)	< .001 / 1.57
CG (*n* = 185)	5.76 (1.89)	6.48 (1.91)	4.12 (184)	< .001 / 0.30
EG vs CG post	—	—	15.87 (368)	< .001 / 1.65

Note. *M* = mean; *SD* = standard deviation; EG = experimental group; CG = control group.

Criterion-level analysis (Table 4) indicated that the largest gains in the experimental group occurred on "Use of digital tools" and "Cognitive interest," followed by "Participation" and "Stability of motivation." Control-group changes on individual criteria were small.

Table 4

Mean Scores by Motivation Criterion (0–3 Scale)

Criterion	EG Pre	EG Post	CG Pre	CG Post
Cognitive interest	1.48	2.51	1.45	1.62
Participation	1.51	2.38	1.49	1.68
Stability of motivation	1.42	2.19	1.40	1.55
Use of digital tools	1.41	2.33	1.42	1.63

Note. EG = experimental group; CG = control group.

Digital homework completion. At the ascertaining stage, 28% of homework assignments in the experimental group were completed with any digital support. By the controlling stage this figure had risen to 61% (an absolute increase of 33 percentage points, corresponding to the approximate "~30%" increase reported in preliminary analyses). In the control group the corresponding figures remained low (12% pre → 15% post).

Overall, the quantitative results demonstrate that the technology-enhanced methodology produced substantial gains in cognitive interest, classroom participation, motivational stability and willingness to use digital tools, as well as a marked increase in digitally supported homework practice.

Qualitative Findings

Thematic analysis of the 24 student and 6 teacher interviews yielded four interrelated themes:

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1. **Increased autonomy and ownership.** Students repeatedly described feeling freer to organise their homework time and to choose how to present answers. One Grade 11 student stated: "I can do the exercises when I want and check myself with the app; it feels like my own work."
2. **Heightened task value and interest.** Participants linked digital activities (especially interactive quizzes and multimedia explanations) to greater interest: "English became less boring because every task is different."
3. **Growth in self-efficacy and confidence.** Several low-achieving students reported reduced fear of mistakes because immediate feedback from the application allowed private practice before class.
4. **Remaining barriers.** Teachers and a minority of students noted occasional network instability and the need for clearer initial training on the application interface. These constraints, however, did not outweigh the perceived benefits for most participants.

Teacher interviews confirmed that the digital application facilitated monitoring of homework completion and allowed more class time for communicative practice. Overall, qualitative data triangulated the quantitative gains and illuminated the mechanisms (autonomy support, immediate feedback, varied task formats) through which the intervention enhanced motivation.

Discussion

Classroom practice in high school EFL settings needs to respond to the finding that motivation is closely tied to students' immediate learning experiences, self-efficacy, and opportunities for autonomy and collaboration. The present quasi-experimental results align with self-determination theory: the digital application afforded greater autonomy (choice of time and pace), competence feedback (immediate scores and explanations), and relatedness (shared digital activities), producing large gains in measured motivation (d = 1.57 within EG; d = 1.65 between groups at post-test).

Qualitative work in rural and urban school contexts shows that low-achieving students' motivation is heavily shaped by external influences such as institutional context, family involvement, peer relationships, and broader sociocultural norms, with poor self-regulation and low self-efficacy emerging as major barriers (Phan, 2025). The interview data in this study indicate that carefully scaffolded digital tools can mitigate some of these barriers by providing private practice opportunities and reducing the public cost of error.

Transformative uses of technology, particularly fulfilling home assignments with a dedicated digital application, offer a concrete pedagogical route to strengthen motivation, critical thinking, and self-efficacy. Technology-supported pedagogy can function as replacement, amplification, or transformation; the present intervention moved beyond mere replacement by changing the nature of homework (interactive, self-paced, multimedia) and by freeing classroom time for higher-order interaction. The process of using varied apps fostered learning confidence, task value, and motivation by providing authentic scenarios linked to students' lives and by supporting self-expression and control over the learning product.

Existing work on motivation, technology-supported pedagogy, and artificial intelligence in English language learning reveals several constraints that delimit current knowledge. Common implementation barriers reported by learners include interface difficulties, network instability, uneven group-work contributions, and limited time; these constraints can weaken gains when instructional design assumes technological fluency without explicit support. The present study addressed some of these issues through a readiness survey and brief orientation, yet residual access problems remained for a minority of students.

Limitations include the non-random assignment of intact classes, the reliance on a researcher-developed motivation scale (despite acceptable reliability), and the relatively short intervention period. Future research should employ randomised designs, validated standardised instruments, larger multi-region samples, and longitudinal follow-up to examine retention of motivational gains and differential effects across achievement levels and thinking styles.

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Conclusion

This quasi-experimental study with 370 high-school students in Uzbekistan demonstrated that integrating an author-developed digital homework application with traditional EFL instruction significantly enhanced students' motivation to learn English. The experimental group improved from a medium-low pre-test mean (M = 5.82) to a medium-high post-test mean (M = 9.41) on a 12-point motivation scale ($t(184) = 21.36$, $p < .001$, $d = 1.57$), while the control group showed only modest change. Between-group post-test differences were large ($d = 1.65$). Digitally supported homework rose from 28% to 61%. Qualitative evidence from 24 students and 6 teachers confirmed that the intervention fostered autonomy, task value and self-efficacy.

Scientific novelty lies in the empirical demonstration, within the Uzbek secondary-school context, that a carefully designed digital application aligned with existing textbooks can produce statistically robust motivational gains when embedded in a hybrid pedagogical model. Practical implications include the recommendation that teachers receive targeted professional development in digital pedagogy and that schools ensure equitable device and network access. Longitudinal, multi-site studies with standardised instruments remain necessary to establish long-term effects on language proficiency and to refine differential instructional designs for learners of varying achievement levels and cognitive styles.

REFERENCES

1. Alimova, M. Kh., & Nabijanova, M. Z. (2025). Factors motivating Uzbek learners of English in the upper grade. https://doi.org/10.5281/zenodo.15175679
2. Astuti, P. (2020). Relationship between motivation and discipline of students to student learning outcomes class XI vocational high school. *ENGLISH FRANCA: Academic Journal of English Language and Education, 4*(1). https://doi.org/10.29240/ef.v4i1.951
3. Değirmencioğlu, Ü. L. (2021). The impact of teacher self-efficacy on teaching techniques: Traditional or contemporary? *European Journal of English Language Teaching, 6*(3). https://doi.org/10.46827/ejel.v6i3.3662
4. Dörnyei, Z., & Ushioda, E. (2010). *Teaching and researching motivation* (2nd ed.). Routledge.
5. Getie, A. S. (2020). Factors affecting the attitudes of students towards learning English as a foreign language. *Cogent Education, 7*(1). https://doi.org/10.1080/2331186X.2020.1738184
6. Hong, Y. C., & Ganapathy, M. (2017). To investigate ESL students' instrumental and integrative motivation towards English language learning in a Chinese school in Penang: Case study. *English Language Teaching, 10*(9). https://doi.org/10.5539/elt.v10n9p17
7. Jiao, S., Jin, H., You, Z., & Wang, J. (2022). Motivation and its effect on language achievement: Sustainable development of Chinese middle school students' second language learning. *Sustainability, 14*(16), 9918. https://doi.org/10.3390/su14169918
8. Kosimov, A. A. U., Zokirov, M. T., & Abduolimova, M. (2025). Intrinsic versus extrinsic motivation in EFL: A mixed-methods approach to the university students in the Uzbek context. *Cogent Education*. https://doi.org/10.1080/2331186X.2025.2569685
9. Phan, T. T. H. (2025). Motivational factors of low-achieving EFL learners in rural secondary schools: A qualitative case study. [Journal details to be completed].
10. Shadiev, R., & Wang, X. (2022). A review of research on technology-supported language learning and 21st century skills. *Frontiers in Psychology, 13*, 897027.
11. Toshmatova, S. (2024). Exploring individual-psychological approaches to enhance motivation among EFL students. https://doi.org/10.69617/nuuz.v1i1.10.1.4834
12. Ushioda, E. (2008). Motivation and good language learners. In C. Griffiths (Ed.), *Lessons from good language learners* (pp. 19–34). Cambridge University Press. https://doi.org/10.1017/cbo9780511497667.004