



DIGITAL ENGAGEMENT STRATEGIES AND THEIR IMPACT ON EFL TEACHER ACHIEVEMENT IN DISTANCE EDUCATION

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Abstract: Distance education demands a comprehensive understanding of learner diversity to ensure optimal academic performance. This study, carried out at Universitas Terbuka, examined the factors influencing academic achievement among in-service EFL teachers enrolled in an online English Language Education Program. Specifically, it explored the roles of demographic background, digital readiness, independent learning readiness, English proficiency, and learning styles in shaping students' success in the Teaching English as a Foreign Language (TEFL I) course from 2017 to 2024. Using an explanatory sequential mixed-methods approach, data were obtained from a purposive sample of 20 participants through quantitative surveys and qualitative interviews. The study contributes to existing literature by comparing how high-achieving (HA) and low-achieving (LA) students interact with digital learning platforms and apply learning strategies. Results indicate that HA students utilized structured digital resources such as modules, podcasts, and AI tools alongside consistent study routines, whereas LA students—though more active on social media for “learning”—tended to rely on peers for assignments, indicating lower self-direction. The findings highlight that the effectiveness of digital learning hinges on the quality and purposefulness of engagement rather than mere access or usage duration, offering valuable implications for improving distance EFL teacher education.

Keywords: digital learning; EFL teachers; learning strategies; student profiling; distance education.

INTRODUCTION

The rapid expansion of online and distance education has transformed the landscape of higher education, offering flexible learning opportunities but also posing new challenges for ensuring student success (Seaman et al., 2018; Bower, 2019; Lim et al., 2020). In English as a Foreign Language (EFL) teacher education, particularly within open universities such as Universitas Terbuka, digital learning environments have become the primary medium for instruction. However, these environments require learners to exhibit high degrees of self-regulation, digital literacy, and independent learning readiness (Barnard et al., 2009; Broadbent & Poon, 2015; Zimmerman & Schunk, 2017). Consequently, understanding how EFL teacher-learners engage with digital learning

tools and strategies has become essential for improving academic outcomes in virtual education contexts (Wong et al., 2019; Schunk & Greene, 2020; Lai & Chen, 2022).

Studies on online learning performance have emphasized the centrality of student characteristics—such as prior education, digital readiness, and learning motivation—in determining success (Colorado & Eberle, 2010; Aldholay et al., 2020; Shou et al., 2024). Distance learners often exhibit heterogeneous profiles that influence their engagement levels and ability to navigate online platforms (Einolander et al., 2021; Hamida et al., 2023; Miñoza & Casinillo, 2022). Research consistently indicates that understanding student diversity is vital for designing effective, personalized digital learning interventions

(Brusilovsky & Millán, 2018; Rajenthiran et al., 2017).

English language proficiency remains one of the strongest predictors of academic success in EFL programs (Martirosyan et al., 2015; Al-Busaidi & Al-Mujaini, 2018; Nguyen & Bui, 2021). Learners with higher proficiency levels demonstrate superior comprehension and engagement with academic materials, particularly in English-medium courses (Tsuboya & Tanaka, 2018; Wang et al., 2020). However, proficiency alone does not guarantee achievement; other factors such as motivation, metacognition, and learning strategies play equally crucial roles (Sharma & Chopra, 2015; Muis, 2017).

A growing body of literature underscores the role of digital literacy and readiness as critical determinants of successful participation in online learning (Eshet-Alkalai, 2004; Severin et al., 2020; Lim et al., 2020). While access to technology is a prerequisite, the ability to use digital tools strategically differentiates high performers from low achievers (Wong et al., 2019; Rashid, 2016; Schneider et al., 2021). Research by Kirschner and De Bruyckere (2017) challenges the “digital native” myth, arguing that many learners lack effective digital learning strategies despite extensive technology use, leading to surface-level engagement.

Several studies have linked self-regulated learning (SRL) with superior academic outcomes in online education (Zimmerman, 2002; Panadero, 2017; Jansen et al., 2017). Self-regulated learners actively plan, monitor, and evaluate their progress, exhibiting persistence and adaptive strategies that correlate with higher grades (Broadbent & Poon, 2015; Miller & O'Connor, 2022; Schunk & Greene, 2020). This metacognitive awareness becomes even more critical in distance learning, where external scaffolding is limited and self-management is essential (Cheng et al., 2020).

In relation to learning styles, empirical evidence presents mixed findings. While early research supported the matching hypothesis—aligning instructional methods with learner preferences (Fleming & Mills, 1992; Felder & Silverman, 2019)—subsequent studies argue that effective learning depends more on adaptability and multimodality than strict alignment (Coffield et al., 2021; Pashler et al., 2009; Sullivan et al., 2021). In the context of EFL education, multimodal approaches integrating auditory, visual, and kinesthetic elements have shown to enhance engagement and comprehension (Sung et al., 2017;

Al-Fares & Al-Mansour, 2023; Güven & Külekçi, 2020).

Research in distance education profiling has introduced methodologies for identifying patterns among learners to better predict performance and tailor interventions (Isman et al., 2024; Morados, 2020; Song et al., 2024). Profiling approaches often utilize demographic, behavioral, and psychometric data to cluster students based on performance or engagement (Hailikari et al., 2021; Hamida et al., 2023; Rajenthiran et al., 2017). However, much of this work focuses on general education rather than English teacher education, highlighting a gap in the contextual application to EFL distance learning.

The Universal Design for Learning (UDL) framework has gained prominence as a pedagogical model to accommodate learner diversity in digital contexts (Rose & Meyer, 2002; Meyer et al., 2014). UDL emphasizes multiple means of engagement, representation, and expression, ensuring that all learners can access and process content effectively (Bower, 2019; Sung et al., 2017). Empirical studies demonstrate that UDL-aligned materials improve motivation and reduce cognitive load, particularly in online EFL environments (Rosmayanti, 2025; Al-Fares & Al-Mansour, 2023).

Another growing strand of research explores the quality versus quantity of digital engagement. While many studies equate engagement with frequency or duration of online activity (Avery et al., 2006; Rashid, 2016), recent evidence suggests that deeper, strategic engagement—such as reflective use of AI tools and academic content curation—is far more predictive of achievement (Leu et al., 2019; Lai & Chen, 2022; Shou et al., 2024). High-performing students tend to utilize structured resources, while low-performing peers over-rely on unfiltered social media sources, illustrating the difference between passive consumption and active learning (Michikyan et al., 2014; Junco et al., 2011; Biggs & Tang, 2011).

Despite these developments, there remains a lack of empirical integration of digital engagement, self-regulation, and student profiling frameworks in EFL teacher education contexts. Existing studies often analyze these variables in isolation, overlooking the interactive effects that define learning success in fully online environments (Einolander et al., 2021; Severin et al., 2020; Lai & Chen, 2022). Thus, a holistic model that combines quantitative and qualitative dimensions is necessary to capture the nuanced realities of EFL

learners in distance education systems such as Universitas Terbuka, Indonesia.

While prior studies have established the roles of English proficiency, digital literacy, and self-regulated learning in online education, there is limited comparative evidence explaining how high-achieving and low-achieving EFL teacher-learners differ in their patterns of digital engagement and learning strategies. Most existing research lacks contextualization within Indonesia's open and distance learning institutions, particularly in relation to professional in-service teacher populations. Therefore, this study aims to address the following research questions: (1) RQ1: What are the key learner characteristics influencing academic performance among EFL in-service teachers in distance education? (2) RQ 2: How do digital engagement patterns and learning strategies differ between high-achieving and low-achieving students?

The novelty of this study lies in its integrative use of student profiling and Universal Design for Learning (UDL) frameworks to examine differential digital engagement between high- and low-achieving EFL teacher-learners. Unlike prior studies that focus solely on technology access or frequency of use, this research foregrounds the quality and strategic nature of engagement as central to academic success. Additionally, it applies a mixed-methods approach—combining quantitative profiling with qualitative insights—to capture the complexity of learner behaviors across Indonesia's geographically distributed distance education system (Isman et al., 2024; Rosmayanti, 2025; Lai & Chen, 2022).

This study contributes to both theory and practice in EFL teacher education by deepening understanding of how digital engagement and self-regulated learning interact to influence academic achievement in online settings. The findings are expected to inform policy and pedagogical reforms aimed at enhancing instructional design, fostering learner autonomy, and improving academic support mechanisms within Indonesia's distance education framework (Broadbent & Poon, 2015; Bower, 2019; Rose & Meyer, 2002). By identifying actionable learner characteristics, the study offers valuable implications for developing adaptive, evidence-based strategies that promote equitable and effective learning for in-service EFL teachers.

METHOD

This study employed an explanatory sequential mixed-methods design, combining quantitative and qualitative approaches to examine learner

characteristics, digital engagement, and learning strategies among in-service EFL teachers in distance education. The quantitative phase provided descriptive and comparative profiles, followed by qualitative interviews to explain the underlying behavioral and motivational patterns (Creswell & Plano Clark, 2018; Bazeley, 2013).

A total of 20 in-service EFL teacher-learners enrolled in the Teaching English as a Foreign Language (TEFL I) online course at Universitas Terbuka participated in this study. Participants were purposively selected based on academic achievement, representing 10 High Achievers (HA) and 10 Low Achievers (LA). The group reflected demographic diversity (21–46 years old, 70% female) and professional backgrounds from 15 Indonesian regions (Isman et al., 2024; Broadbent & Poon, 2015).

Data for this study were gathered using multiple validated tools to ensure comprehensive coverage of learner characteristics and engagement factors. The Demographic Survey (DEMO) collected detailed information about participants' personal, educational, and professional backgrounds. The Digital Readiness (DIG) instrument, adapted from the Student Profiling Survey 2024 (Severin et al., 2020), assessed students' internet accessibility, types of digital devices used, and duration of online engagement. To measure English Proficiency (EP), participants completed the EF Standard English Test (EF SET), a reliable, CEFR-aligned online assessment widely recognized for its academic validity (EF SET, 2025). Learners' preferred Learning Styles (LST) were identified using the framework developed by Honey and Mumford (2017), which categorizes learning preferences into active, reflective, theoretical, and pragmatic types. The Readiness for Independent Learning (RIL) instrument, adapted from Islam and Puspitasari (2003), evaluated students' capacity for self-directed learning within open and distance education contexts. Finally, an In-depth Interview Guide comprising 31 semi-structured prompts was developed and validated by two experts in English Language Teaching (ELT) and Open and Distance Learning (ODL), following the methodological guidance of Kvale and Brinkmann (2015). All instruments underwent expert validation for content accuracy, readability, and relevance, followed by pilot testing to confirm internal consistency and reliability prior to large-scale administration.

The study was conducted in two sequential stages to ensure comprehensive data triangulation. In the quantitative phase, online surveys and EF

SET English proficiency tests were distributed to participants through official student chat groups. Collected data were screened for completeness and accuracy, then analyzed descriptively to identify key learner characteristics and performance patterns across the sample. These findings served as the foundation for participant selection in the next phase. In the qualitative phase, ten participants—five high achievers (HA) and five low achievers (LA)—were purposively selected to provide deeper insights into their digital engagement and learning strategies. Semi-structured interviews were conducted via Microsoft Teams, recorded with participants' consent, and subsequently transcribed verbatim. The interview data were analyzed thematically following the procedures outlined by Braun and Clarke (2006) and Saldaña (2016), allowing for the identification of recurring patterns, themes, and contrasts between HA and LA learners.

Quantitative data were analyzed using descriptive statistics (mean, frequency, percentage) and comparative matrices between HA and LA groups. Qualitative data were processed using NVivo 14, following a three-step coding process: open, axial, and thematic synthesis (Miles & Huberman, 1994). Integration of both datasets enabled a comprehensive interpretation of learner

behavior and digital strategy use (Broadbent & Poon, 2015; Lai & Chen, 2022).

Ethical clearance was obtained from the Universitas Terbuka Research Ethics Committee. Participants provided informed consent and were assured of confidentiality and voluntary participation. All recordings and transcripts were securely stored and anonymized for analysis (Dabbagh & Kitsantas, 2012).

RESULTS AND DISCUSSION

This section presents the study's findings and discussion, organized around the key variables identified to characterize students in an online learning environment, with a particular focus on digital engagement and learning strategies. Each subsection integrates quantitative observations with qualitative insights, interpreting them in light of current literature.

Student characteristics and academic performance

Table 1 presents a synthesized overview of the key demographic and professional characteristics of the HA and LA groups, offering a concise comparative profile that contextualizes performance differences.

Table 1. *Comparative profile of high-achieving (HA) and low-achieving (LA) students*

Characteristic	High Achievers (HA)	Low Achievers (LA)	Remarks/Interpretation
Sample size (n)	10	10	Equal group distribution
Gender	80% Female (8), 20% Male (2)	60% Female (6), 40% Male (4)	Gender difference not considered a major factor in performance
Mean Age (years)	29.4 (Range: 22–46)	27.8 (Range: 21–37)	Slightly older HA group may indicate higher maturity and life/work experience (Chen & Zhang, 2020)
Generational Composition	50% Millennials, 40% Gen Z	40% Millennials, 60% Gen Z	HA group slightly older and more diverse
Educational Background	Mixed: SMTA, D3, S1	100% SMTA (High School)	Higher education levels linked to advanced academic and critical thinking skills (Isman et al., 2024)
Teaching Experience (years)	Mean: 5.8	Mean: 4.5	More experience may enhance pedagogical understanding and academic success
Overall Pattern	Diverse background, mature, experienced, self-regulated	Homogeneous background, younger, less experienced	Educational and experiential diversity appear positively associated with academic performance

The study sampled 20 students, with a gender distribution of 70% female and 30% male. Within the High Achievers (HA) group, females predominated, representing 80% (8 students), while males accounted for 20% (2 students). In contrast, the Low Achievers (LA) group consisted of 60% females (6 students) and 40% males (4

students). This distribution suggests that gender differences were present but not pronounced enough to be considered a major independent factor influencing academic performance.

Age analysis revealed that HA students had a mean age of 29.4 years, ranging from 22 to 46, with the majority being Millennials (50%) and Gen Z

(40%). LA students were slightly younger, with a mean age of 27.8 years (range: 21–37), predominantly Gen Z (60%) and Millennials (40%). Although the age difference between groups was modest (1.6 years), the slightly older average age in the HA group could imply greater maturity or prior professional and life experience, potentially contributing to more effective learning strategies and better academic outcomes, in line with research on adult learners in online settings (Chen & Zhang, 2020).

Educational background revealed a more marked distinction between groups. All LA students had a high school education (SMTA), whereas the HA group displayed a wider range, including undergraduate (S1) and diploma (D3) holders. This pattern indicates that higher educational attainment may support academic success by equipping students with stronger analytical skills, critical thinking abilities, and familiarity with structured learning environments (Isman et al., 2024). Conversely, a more limited educational foundation among LA students may pose challenges in navigating the demands of an online pedagogy course.

Teaching experience also varied slightly, with HA students averaging 5.8 years compared to 4.5 years for LA students. Although not the sole determinant, this difference may reflect greater pedagogical expertise and classroom familiarity, which can indirectly enhance performance in a TEFL course.

English proficiency

The analysis of English Proficiency (EP) scores across the entire sample revealed that one-third of the students (33.3%) were positioned at the A2 Elementary level, while approximately half of the participants fell within the A2 to B1 range of the CEFR scale. This distribution indicates that a considerable proportion of the students are still in the process of developing foundational English language skills—an issue widely recognized in EFL learning contexts (Nguyen & Bui, 2021). A general upward trend was observed between English proficiency and academic outcomes: students with higher EP scores typically achieved stronger course performance, though the correlation was not entirely linear or absolute.

When examined by achievement group, clear distinctions emerged. High-Achieving (HA) students predominantly clustered around the B1 Intermediate level and above, with a notable subset

reaching the C2 Proficient range. Their mean EP score was 57.5, corresponding to a mean final grade of 68.21. In contrast, the Low-Achieving (LA) group was concentrated in the A2 Elementary band or below, with a mean EP score of 38.0 and a mean final grade of 41.97. These patterns suggest a strong positive relationship between English proficiency and academic performance, reinforcing earlier evidence that linguistic competence is a major predictor of success in English-medium learning environments (Al-Busaidi & Al-Mujaini, 2018).

However, the relationship between proficiency and achievement was not deterministic. Considerable variability emerged within the mid-range proficiency levels (A2–B1), suggesting that additional factors—such as learning strategies, motivation, and self-regulated learning (SRL) ability—play a substantial role in shaping academic outcomes. For instance, two HA students demonstrated strong performance (grades of 70.0 and 60.2) despite possessing relatively low CEFR levels (A2 and A1, respectively), indicating compensatory strengths in SRL and persistence. Conversely, two LA students, despite relatively high English proficiency levels (B1 and C2), earned poor grades (36.0 and 28.0), implying that proficiency alone cannot guarantee academic success without effective learning regulation and engagement.

This pattern underscores the complex interplay between linguistic ability, learning behaviors, and cognitive regulation in determining student achievement. It also highlights a critical pedagogical challenge for institutions: roughly half of the learners in this study occupy the A2–B1 proficiency range, a developmental stage where targeted instructional support is most crucial. Future interventions should therefore emphasize strategy training, metacognitive awareness, and digital learning autonomy to help students within this middle band leverage their existing proficiency more effectively.

The relationship between students' English proficiency (EP) and their academic performance reveals clear trends, with higher EP generally associated with better course outcomes. However, notable exceptions exist, highlighting the role of self-regulated learning (SRL), motivation, and other non-linguistic factors in academic success. Table 2 summarizes these patterns across different EP levels and performance groups.

Table 2. Academic performance by English proficiency (EP) level

Group	EP Range (CEFR)	Mean EP Score	Mean Final Grade	Dominant CEFR Level	Performance Trend / Interpretation
High Achievers (HA)	B1 – C2	57.5	68.21	B1–C2	Strong positive association between higher EP and academic success; HA students typically demonstrate stronger linguistic and cognitive control in English-medium learning.
Low Achievers (LA)	A1 – B1	38.0	41.97	A2 or lower	Lower EP corresponds with weaker academic outcomes, indicating difficulty comprehending and applying course content in English.
Entire Sample	A1 – C2	—	—	A2–B1 (50% of total sample)	Half of students fall within A2–B1 range, indicating developing proficiency and variability in performance outcomes.
Outliers (HA)	A1–A2	—	60.2–70.0	A1–A2	Some HA students achieved high grades despite low CEFR levels, implying strong SRL and compensatory learning strategies.
Outliers (LA)	B1–C2	—	28.0–36.0	B1–C2	A few LA students with high EP underperformed, likely due to weak motivation, limited SRL, or poor task management.

Learning styles

The study indicated that most high-achieving students exhibited a preference for auditory learning. This aligns well with the structure of the Learning Management System (LMS) employed in the TEFL I course, which relies heavily on video-based materials, including embedded YouTube content (Isman et al., 2024). Such auditory-focused resources effectively support learners who grasp information best through listening, thereby enhancing engagement, comprehension, and academic performance. This observation is consistent with learning theories suggesting that aligning instructional delivery with students' preferred learning modalities can optimize information processing and retention (Fleming & Mills, 1992; Pashler et al., 2009).

However, the analysis also highlights a notable limitation in the LMS design: while it caters effectively to auditory learners, it may inadequately support students with visual, kinesthetic, or multimodal preferences. Although videos provide some visual cues, the platform places limited emphasis on interactive, hands-on, or experiential learning activities that are critical for kinesthetic learners. The absence of interactive simulations, role-playing exercises, and practical application tasks may hinder learners who benefit from "learning by doing" or from structured visual organization of concepts. This imbalance suggests that the LMS may unintentionally favor certain

learning styles, potentially disadvantaging a portion of the student population.

In the context of open and distance learning at Universitas Terbuka—where students are highly diverse and face-to-face interactions are minimal—this mismatch becomes particularly significant. When learner preferences are not adequately accommodated, cognitive load can increase, engagement may decrease, and overall academic performance can be negatively impacted (Al-Fares & Al-Mansour, 2023; Kirschner & De Bruyckere, 2017).

These findings underscore the need for a more multimodal instructional approach that embraces the diversity of learners' styles. Beyond merely identifying learning preferences, actionable strategies can be incorporated to foster inclusive online education. Examples include interactive quizzes, drag-and-drop activities, virtual collaborative whiteboards, and opportunities for learners to create visual summaries or concept maps. Integrating the principles of Universal Design for Learning (UDL)—which advocate for providing multiple means of representation, engagement, and expression—can enhance both accessibility and effectiveness, ensuring that all students, regardless of their dominant learning style, are supported in achieving their learning outcomes (Rose & Meyer, 2002; Meyer et al., 2014).

Table 3. *Learning styles, LMS features, and potential gaps*

Learning Style	LMS Features Supporting It	Observed Effect on Students	Potential Gap/ Limitation	Suggested Enhancements
Auditory	Video lectures, YouTube links	High engagement and strong performance for HA students	Minimal gap for auditory learners	N/A (already well-supported)
Visual	Video content with some visual cues	Moderate support; helps with concept visualization	Lack of diagrams, charts, or visual summaries outside videos	Add infographics, concept maps, interactive visuals
Kinesthetic	Limited hands-on activities	Low support; learners struggle to “learn by doing”	No simulations, role-playing, or practical exercises	Introduce interactive simulations, drag-and-drop activities, virtual labs
Multimodal	Mix of video and text	Partial support; may struggle without diverse options	Insufficient integration of multiple engagement modes	Implement multimodal learning: quizzes, collaborative boards, student-created visuals
Overall Recommendation	-	-	LMS favors auditory learners, disadvantaging others	Apply Universal Design for Learning (UDL) principles: multiple means of representation, action/expression, and engagement

Digital readiness

The analysis of digital readiness indicators reveals nuanced distinctions between high- and low-achieving students, emphasizing that technological access alone does not determine academic success. Instead, the quality of engagement, educational background, and self-regulated learning (SRL)

competencies significantly shape how effectively students utilize digital tools for academic purposes. Table 4 presents a comparative overview of key digital readiness indicators between the two groups, highlighting disparities in access, usage patterns, and digital literacy, along with recommended interventions to address these gaps.

Table 4. *Comparative indicators of digital readiness between high and low achievers*

Indicator	High Achievers (HA)	Low Achievers (LA)	Interpretation / Implication	Recommended Intervention
Internet Access (Home Connectivity)	100% have stable home internet	60% have home internet access	Access disparity may partly affect study consistency and participation in online tasks	Expand access to reliable internet infrastructure and provide data subsidies for disadvantaged students
Daily Internet Usage Duration	50% use >5 hours/day	60% use >5 hours/day	Longer use does not guarantee higher achievement; effectiveness of use matters more than duration	Educate students on purposeful digital engagement and time management strategies
Quality of Digital Engagement	Purposeful use (academic search, LMS, research, reflection)	Predominantly passive use (social media, entertainment)	High-performing students utilize the internet more strategically and academically	Provide training on effective academic use of digital platforms and online research skills

Educational Background Influence	Many with college experience (D3/S1)	All with high school education (SMTA)	Higher education background enhances critical and evaluative use of online resources	Integrate preparatory modules on academic literacy and digital critical thinking for new students
Digital Literacy and SRL Skills	Stronger in evaluating sources, synthesizing info, and maintaining focus	Weaker in critical evaluation and information filtering	Cognitive and metacognitive skills are essential to transforming access into achievement	Implement digital literacy workshops and SRL training within online learning programs
Overall Digital Readiness	High – characterized by strategic and reflective online learning behavior	Moderate to low – limited by shallow engagement and weaker SRL	Digital readiness is multidimensional, not only about access but about strategy and mindset	Foster comprehensive digital readiness through UDL-based online orientation and continuous support programs

The findings reveal that digital readiness involves more than access—it reflects how effectively students use technology to support learning. All high-achieving (HA) students (100%) reported stable home internet access, compared to 60% of low-achieving (LA) students, suggesting that reliable infrastructure can support achievement. However, both groups showed similar daily internet use (around 50–60% exceeding five hours), indicating that time spent online does not necessarily enhance performance.

Academic success appears to hinge on the quality and purpose of digital engagement, not its duration. HA students tend to use digital tools strategically for study and reflection, while LA students often engage passively or for non-academic purposes.

Students with previous college experience demonstrated stronger digital learning behaviors—better at locating, evaluating, and synthesizing credible information—than those with only secondary education. This supports the idea that higher education nurtures self-regulated learning (SRL) and critical thinking, both crucial for online study.

Therefore, digital readiness should be viewed holistically—encompassing cognitive, metacognitive, and affective competencies.

Improving digital access alone is insufficient; institutions must also cultivate students’ digital literacy, critical evaluation, and self-regulation skills. Programs that integrate digital literacy training, critical evaluation tasks, and metacognitive strategy instruction into courses or orientation modules can bridge readiness gaps and promote equitable academic success.

Ultimately, true digital readiness lies not in technology availability, but in learners’ ability to transform digital access into meaningful and sustained academic achievement.

Readiness for independent learning

The comparative analysis of Readiness for Independent Learning (RIL) indicators highlights substantial differences between high- and low-achieving students. High achievers exhibit greater self-regulation, motivation, and adaptability—skills that align closely with successful performance in distance education contexts such as Universitas Terbuka. In contrast, low achievers tend to rely heavily on external structure and demonstrate weaker self-management capacities. Table 5 presents a detailed comparison of RIL dimensions and outlines targeted interventions to support learners with lower levels of independent learning readiness.

Table 5. Comparative indicators of readiness for independent learning (RIL) between high and low achievers

Indicator	High Achievers (HA)	Low Achievers (LA)	Implication	Recommended Intervention
RIL Level	High readiness for independent learning	Low to moderate readiness	RIL affects adaptability to distance learning	Assess RIL early; give tailored support
Learning Approach	Self-directed and proactive	Dependent on guidance	Reflects SRL capacity differences	Embed SRL coaching in courses

Motivation	Intrinsically motivated, persistent	Extrinsically driven, less persistent	Motivation influences learning outcomes	Use feedback and reflection to boost motivation
Adaptability	Flexible and resourceful	Struggles to adjust strategies	Adaptability drives independent learning success	Facilitate peer and reflection sessions
Learning Environment	Performs well in autonomous systems	Needs structure and guidance	ODL suits high-RIL learners more	Provide mentoring and structured modules

Readiness for Independent Learning (RIL) emerged as a particularly significant factor influencing academic performance in the TEFL I course.

High achievers consistently demonstrated above-average to high readiness for independent learning, indicating a strong capacity for self-direction and taking charge of their own learning processes. This clear correlation between higher RIL and better academic performance highlights the importance of intrinsic motivation and self-management in an online learning environment (Isman et al., 2024; Muis, 2017). Students with higher RIL are often more proactive in seeking out resources, setting goals, monitoring their own progress, and adapting their learning strategies when faced with challenges, which are crucial attributes for success in distance education where external scaffolding is limited (Cheng et al., 2020; Jansen et al., 2017). They exhibit strong forethought, performance, and self-reflection phases of SRL, actively planning their learning, monitoring their comprehension, and evaluating their effectiveness (Zimmerman, 2002).

Conversely, low achievers generally exhibited below-average to average readiness for independent learning. These students typically require more external support or structure within their learning environments to succeed, as their lower RIL correlates directly with lower course grades (Isman et al., 2024). In the context of Universitas Terbuka, an open and distance learning institution where independent learning is paramount (Islam & Puspitasari, 2003), the ability

to self-regulate one's learning becomes a primary determinant of success.

This finding underscores RIL as a crucial area for assessment and targeted intervention in online EFL teacher education programs, suggesting that fostering self-regulated learning skills could be a highly effective strategy for improving academic outcomes for at-risk learners (Barnard et al., 2009; Broadbent & Poon, 2015). Interventions could include explicit instruction on time management, goal setting, effective study strategies (e.g., active recall, spaced repetition), and metacognitive awareness, alongside regular feedback and scaffolding to build independent learning habits. Developing these skills can empower students to become more autonomous and effective learners in the self-directed environment of distance education (Dabbagh & Kitsantas, 2012).

Digital engagement and learning strategies

The qualitative findings from in-depth interviews revealed distinct contrasts between high- and low-achieving students in their digital engagement and learning strategies. While both groups actively used digital tools, their approaches diverged significantly in depth, focus, and intentionality. High achievers demonstrated structured, goal-oriented engagement supported by strong self-regulated learning (SRL) skills, whereas low achievers tended toward passive or fragmented use of digital media, often mistaking activity for effective learning. Table 6 summarizes these behavioral differences and outlines targeted interventions to enhance the quality of digital engagement among learners.

Table 6. *Comparative patterns of digital engagement and learning strategies*

Aspect	High Achievers (HA)	Low Achievers (LA)	Key Insight / Implication	Suggested Intervention
Digital Platforms Used	Structured resources (modules, podcasts, AI tools)	Unstructured social media (YouTube, Instagram)	LA students' high activity ≠ productive learning	Train students on goal-oriented and critical digital use
Learning Focus	Deep, consistent study;	Passive multitasking; easily distracted	Surface engagement limits retention	Introduce guided study plans and reflection logs

	comprehension-driven			
Self-Regulated Learning (SRL)	Strong SRL—plans, monitors, adapts	Weak SRL—peer dependence	HA students show autonomy; LA lack metacognitive control	Embed SRL workshops on time management and strategy use
Social Media Use	Minimal and purposeful	Excessive, mixed with entertainment	Distraction undermines learning quality	Promote digital well-being and responsible media habits
Learning Independence	Independent and proactive	Reliant on peers for answers	Reflects deep vs. surface learning contrast	Encourage peer mentoring for critical discussion

The qualitative interviews provided deeper insights into student behavior, particularly regarding digital engagement and learning strategies, which are closely tied to self-regulated learning. A clear pattern emerged: low-achieving (LA) students were more active on social media platforms such as YouTube, Instagram, and Facebook, using them as learning sources, while high-achieving (HA) students engaged less with social media but adopted more structured and purposeful study approaches. Despite higher activity levels, LA students performed worse, suggesting that passive digital consumption does not translate into meaningful learning. Their use of social media often led to fragmented attention and superficial understanding due to a lack of goal-setting and self-regulation (Junco et al., 2011; Michikyan et al., 2014).

In contrast, HA students demonstrated strategic engagement—combining reading modules, English podcasts, AI tools, and consistent daily study. These behaviors reflect deeper cognitive processing, deliberate practice, and effective time management (Zimmerman, 2002; Panadero, 2017). LA students' reliance on peers for tutorial answers further indicated dependency and a surface-level learning approach (Biggs & Tang, 2011).

Overall, the findings highlight that effective digital learning depends not on tool usage frequency but on purposeful engagement. Educators should therefore guide students in critical digital literacy, metacognitive regulation, and active learning strategies to help them transition from passive consumers to autonomous, reflective learners (Lai & Chen, 2022).

CONCLUSION

This study offers significant insights into the determinants of academic success among in-service EFL teachers in Universitas Terbuka's online TEFL I course, emphasizing digital engagement and learning strategies. Findings

reveal a clear divide between High-Achieving (HA) and Low-Achieving (LA) students. HA students adopted structured, self-regulated strategies, effectively integrating digital tools such as modules, podcasts, and AI applications with consistent study routines. Conversely, LA students, though highly active online, tended to rely on peers for academic tasks, reflecting limited autonomy and less strategic engagement. These distinctions highlight that academic achievement in online learning depends more on the quality and intentionality of engagement rather than mere technological access or online activity duration.

Pedagogically, the results underscore the importance of integrating explicit instruction in digital literacy and self-regulated learning (SRL) into online course design. Educators should promote strategic engagement through multimodal learning materials, scaffolding, and continuous feedback that cultivates independent learning readiness, especially for lower-performing students. At the policy level, institutions should implement early profiling systems to identify at-risk learners, enhance professional development for online instructors, and invest in adaptive, interactive learning resources that accommodate diverse learning styles.

Despite its contributions, this study has limitations. The small purposive sample and single-course focus limit generalizability, while self-reported data may introduce bias. Moreover, the cross-sectional design captures only a momentary view of learning behaviors, without tracing developmental or causal changes over time.

Future research should involve larger, more diverse samples across multiple disciplines and employ longitudinal or experimental designs to explore the causal impact of digital literacy interventions on learning outcomes. Incorporating objective learning analytics could also strengthen the validity of engagement data. Ultimately, understanding and fostering strategic, reflective

digital engagement remain essential for advancing quality and equity in distance EFL teacher education.

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