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Decoding the Significance of Digital Literacies among EFL Learners: A Probe into the Consequences on Technostress, Foreign Language Anxiety, Academic Enjoyment, and Language Achievement

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Abstract: Feeling anxiety and technostress can have harmful effects on EFL learners' language learning. On the other hand, having high academic enjoyment (AE) can generate positive impacts on English language learning. Concerning the psychological variables' role in English language learning, this investigation inspected the effects of digital literacy (DL) on technostress, foreign language anxiety (FLA), AE, and language achievement. To meet this objective, 70 intermediate subjects were selected and divided into an experimental group (EG) and a control group (CG). Next, the pre-tests of technostress, FLA, AE, and language learning achievement were administered to both groups. After that, the EG was taught the coursebook using technology. DL was also focused on it, and the students were trained to apply technology when learning new English materials. On the other hand, the same lessons were taught to the CG applying a traditional method. After teaching all classes, the mentioned scales were administered as the posttests of the study. The results of the One-way ANCOVA test indicated that the EG outdid the CG in the four posttests, implying that using DL reduced the anxiety and technostress of the EG but increased their AE. The ramifications of this investigation can inspire both EFL learners and educators to apply digital tools and technology in English learning and teaching.

Keywords: Academic Enjoyment, Digital Literacies, Foreign Language Anxiety, Language Achievement, Technostress.

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Introduction

Technology is an inseparable part of our daily lives, and its influence on education is inevitable. Digitalization brought about a significant shift in many facets of our lives as the researchers moved from an industrialized to an information-driven civilization (Perera, 2021). Because of this, digital tools are now an essential component of education, and learning and teaching resources are no longer only pens and whiteboards (Chen et al., 2020). In today's environment, using technology in the classroom has become crucial and essential (Correa, 2015; Alraimi et al., 2015; Teo et al., 2022). The benefits of using technologies in language acquisition extend beyond educators to include stakeholders and EFL students. It has given educators and students new ways to use the internet sphere to develop their abilities and access reliable resources applying the digital space (Hutchison & Woodward, 2018).

Digital technology's explosive rise has altered several facets of educational processes, including domains related to teachers' professional enhancement (Al-Obaydi et al., 2023). Furthermore, the advancement of digital technology calls for particular abilities that will enable students to thrive in the 21st-century workforce and digital era (Heidari & Tabatabaee-Yazdi, 2021). Today's buzzword, "DL" refers to the capability to use and understand information from a diversity of resources in various formats interpreted by computers. Zurkowski (1974) introduced the idea of DL, which he defined as the capacity to recognize, find, and analyze information.

According to Palilonis and Watt (2019), DL is the capacity to create and communicate meaning in diverse forms and formats to engage in creative processes, collaborate with others, and convey those aspects to others in digital environments. It also involves understanding the context and circumstances in which these processes may be aided by technology. Furthermore, the majority of students in today's classrooms have used digital technology to supplement their education by reading books, journals, and articles; sending emails to peers or tutors; gaining access to learning management systems; taking multiple online quizzes; and even participating in numerous discussion forums (Tang & Chaw, 2016).

Digital technology helps EFL teachers develop the quality of their instruction by assisting their young students in learning the language (EDC, 2018). With the use of DL tools, young learners may better comprehend every word, text, and meaning through the vast range of digital technology available. Stated differently, communication and information technologies may be utilized as a potent instrument to enhance the effectiveness and caliber of education when applied appropriately (Hockly, 2015; Abeysekera & Dawson, 2015; Viberg & Grönlund, 2017).

Technology requires DL to be applied successfully in EFL classes. The ability to write and read is considered literacy in the conventional sense. The advent of digital technologies in the 1990s transformed literacy from a knowledge-based, traditional, and paper-based system into a modern, social computer literacy (Carolus et al., 2023). Digital technology brought with it a variety of forms of literacy, such as DL (Carolus et al., 2023), computer literacy (Wang, 2023; Gruszczynska & Pountney, 2013), media literacy (Fu & Wang, 2022; Mellati et al., 2015), and information and internet literacy (Belda-Medina, 2022). All the literacy mentioned above may be included in DL. English instructors must possess these abilities to be ready for their future careers. In this case, the educational methods necessitate sufficient literacy to handle technology functions (Dashtestani & Hojatpanah, 2020; Rezai et al., 2024; Tour, 2020).

Digital technology is not without its restrictions, though. Digital spaces, for example, can be used less for teaching and more for amusement (Murphy & Lebans, 2009). For instance, Palacios-Hidalgo and Huertas-Abril (2022) contended that a deficiency in DL might subject educators and learners to unsuitable and illegal information, causing them to become disconnected from reality or develop a technological addiction. Furthermore, Bond and colleagues (2019) contended that this pivotal matter would give rise to the possibility of the digital divide concerning the availability of digital resources and their utilization (Tamborg et al., 2018; Belda-Medina, 2022; Mellati & Khademi, 2020). Digital technology, however, has more benefits than drawbacks. Put another way, having a solid understanding of digital technology may help instructors advance professionally, feel more empowered, enhance the standard of instruction, and gain self-assurance and technological proficiency (Pérez-Escoda et al., 2019).

Although the usage of technologies in language instruction can be valuable, this does not guarantee that EFL learners will be capable of utilizing it in the classrooms (Wang, 2023). There are a few reasons why students feel dubious about using technology. Anxiety is among the most prevalent causes (Hafner & Ho, 2020). The primary cause of this worry is the students' exposure to technology equipment. Technophobia, also known as computer anxiety or fear of computers, is the term used to describe the terror and panic an individual has when utilizing a computer or contemplating using one in the future (Hartwick, 2018). One substantial barricade to the practical and successful application of technologies in any sector is people's fear of it (Wang, 2023; Huang et al., 2020).

In addition to technophobia, EFL learners face technostress while utilizing technology in learning. People's emotional and cognitive stress brought on by the technological demands of

their jobs is known as "technostress", a psychological strain brought on by the employment of technologies (Tarafdar et al., 2019). Technostress is the term used to describe users' stress due to their incapability to manage the demands of technologies in their profession and education (Maier et al., 2019). Put differently, the incapacity to adjust to new technologies healthily is the root cause of the sickness known as "technostress" (Narahari & Koneru, 2017). As a result of the introduction and usage of communication and information technology, the workplace has changed, leading to the development of technostress—a negative relationship between people and technology (Jena & Mahanti, 2014).

For instance, Joo et al. (2016) discovered an undesirable association between instructors' intention to use technology and technostress. Furthermore, Verkijika (2019) found that the link between the perceived utility and adoption intents of digital textbooks is negatively moderated by technostress, indicating that the stronger the technostress, the less significant the impacts of perceived effectiveness on adoption intention. According to Steelman and Soror (2017), unfavorable psychological states like technostress may affect an individual's cognitive assessment of a particular technology. Technostress, as defined by Ragu-Nathan et al. (2008), is the adverse effect of technology usage, and stress, resistance, anxiety, and anger are caused by the dread of utilizing ICTs (Wang et al., 2008).

It follows that students who experience technostress may experience anxiety. Pupils may feel a range of good and bad emotions, and these emotional variables may significantly influence language acquisition (Arnold & Brown, 1999). Academic success—or lack thereof—may heighten students' emotions, impacting their learning and perhaps shaping or dictating their career path (Pekrun & Perry, 2014). In the setting of language learning, anxiety appears to be a form of emotion characterized by tension, panic, or apprehension (MacIntyre & Gardner, 1994). In general, anxiety is explained as a bad emotional and motivational state that arises in frightening situations (Eysenck et al., 2007). Managing stress is a challenging feeling. Researchers and language teachers have been concerned about L2 acquisition anxiety for many years (Nor et al., 2022).

Language learners' unease mainly causes anxiety in foreign language classes since they lack the language tools to represent who they are accurately. Some people find it naturally unsettling to show oneself to the outside world in a newly acquired language with poor regulation (Li & Dewaele, 2021). For many people worldwide, learning a foreign language has become increasingly important due to advancements in science, business, tourism, technology, and other fields. However, a variety of psychological and linguistic elements, including language anxiety, learning style, cultural background, motivation, self-efficacy, and attitudes,

all impact the process of learning English as an L2. According to Horwitz (2017), pupils who are studying English as an L2 experience anxiety. Riasati (2011) stated that studying a foreign language causes a great deal of stress for many pupils and asked English language teachers to recognize language anxiety in the classroom and find strategies to make the language learning process easier.

According to Karatas et al. (2013), anxiety may be beneficial when it results in enthusiasm and excitement, but it can also be detrimental when it causes concern, fear, confusion, and a decline in self-worth. State anxiety and trait anxiety are the two categories of anxiety, according to Phillips (1992). A person with state anxiety will often have a consistent inclination to feel nervous, but only under specified circumstances. State anxiety is a situation-specific characteristic of anxiety. Conversely, trait anxiety refers to a consistent inclination to experience anxiety over a broad spectrum of circumstances. As a result, people have difficulties learning a language in a classroom, leading to language anxiety (Han et al., 2022).

Foreign language anxiety (FLA) may negatively impact students' social, cognitive, and academic performance (Dewaele & MacIntyre, 2016). Stated differently, anxiety impedes the advancement of language learners and erodes their self-assurance in the target tongue, thereby intensifying anxiety and creating a vicious cycle. Anxious students might avoid interacting with others (Jin & Dewaele, 2018). As said by Wang et al. (2021), positive emotions can also have an impact on several parts of life, particularly second language teaching and learning. These include academic engagement, grit, pleasure, emotion control, well-being, and other comparable notions.

Second-language learners have also reported experiencing positive feelings, including happiness, contentment, and a sense of achievement due to both external and internal aspects (Gregersen et al., 2014). The enjoyment of foreign language learning is thought to be a reaction to the idea of studying a foreign language with fear (Zeng, 2021). Positive emotions that language learners might encounter when they are imaginative, meet their mental needs, finish assignments and activities, overcome obstacles, try new things, and are in a welcoming learning environment are described by Dewaele and MacIntyre (2014). These feelings are essential for learning a foreign language; thus, it is vital to comprehend these complicated feelings of FL learners to develop better pedagogical strategies to benefit EFL learners' performance and advancement.

Since the initiation of positive psychology in SLA in the twenty-first century, researchers have approached FL learning differently to access a broader spectrum of learner emotions (MacIntyre & Gregersen, 2012). The discovery, validation, and measurement of a wide range

of EFL emotions followed, including satisfaction, pride, pleasure, hope, excitement, and boredom (e.g., Dewaele & Li, 2021; Teimouri, 2018; Li, 2021). Among these, pleasure is the most explored pleasant feeling experienced by EFL learners (Dewaele & MacIntyre, 2014, 2016). FLE is the positive emotion that language learners experience in the classroom when they are creative, push past their comfort zones, meet their psychological needs, finish tasks and activities, try something new, and are in a supportive and encouraging environment, according to Dewaele and MacIntyre's (2014) conceptualization (Davari et al., 2020).

The Broaden-and-Build hypothesis is the foundational theory in positive psychology (Fredrickson, 2003). This idea states that whereas negative emotions limit people's thought-action repertoires, good emotions allow them to expand, which aids in the generation of social resources. It is asserted that experiencing positive emotions leads to language learners gaining more knowledge and accumulating more resources for future language acquisition. Conversely, negative emotions will make it harder for students to concentrate and narrow their options for linguistic input. Fear of foreign language classes lost interest in favor of a broader spectrum of emotions, including pride, love, joy, hope, embarrassment, regret, and tediousness (Dewaele & Li, 2021).

The broaden-and-build theory shows the positive predictive effect of positive emotions on academic attainment. Based on Bandura's (1991) self-regulation and social cognitive theory, students will assess their acts and determine whether they elicit positive or negative emotional reactions. They are inclined to confidently judge their own deeds when they put in the necessary effort to learn a foreign language, producing good emotional reactions like enjoying the language. According to Dewaele and MacIntyre (2016), enjoyment is an excellent emotional state that results from pushing oneself above one's homeostatic bounds and taking on a demanding task. Learning a foreign language for pleasure can increase students' cognitive resources, which can help them study more efficiently. Enjoying a foreign language may also provide students confidence, reduce stress, and rekindle their passion for learning the language (Piniel & Albert, 2018).

The other theoretical framework related to this study is the sociocultural theory, which holds that learning is a complicated process of cultural and social interaction in specific contexts (Vygotsky, 1979). This theory contends that since learning a second language is tied to cultural and social contexts, which can change over time, learning is a continuous process in the context of L2 learning (Poedjiastutie et al., 2021; Wilson et al., 2017; Tour, 2020). Literacies are first taught to researchers through the sociocultural lens in the early stages of development. Because they think literacy is firmly situated and contextualized in social and

cultural interactions, some researchers also look at literacy from cultural and social perspectives (Milton & Vozzo, 2013; Wilson et al., 2017; Tour, 2020; Hafner, 2014). Similarly, technological advances transform conventional printed-based literacy into digital/technology-based literacy practices. The sociocultural perspective also influences the idea of DLP. Many academics try to locate technology literacy in social and cultural contexts pertinent to the real-world circumstances of learners. In this context, the term "DL" refers to more than only assessing the technical technological proficiency of educators and students. Technical know-how is not the only requirement for DL. However, engaging, valuing, administering, communicating, and making meanings across a wide variety of digital technology applications in virtual settings, audiences, and purposes requires social and cultural knowledge and understanding (Hafner et al., 2015).

There are some empirical studies on the effects of DL on English language learning. Amiri (2009) conducted research that demonstrated the benefits of DL on students' academic achievement. Similarly, Brown's (2009) study on the connection between students' achievement and DL concluded that there was a favorable association. Strong positive correlations were found between school graduation and various outcomes related to the field of education in Fairlie et al. (2010) analysis. It was also shown that computer literacy affects students' performance on other academic assignments and grades.

Similarly, Lopez-Islas and Jose's (2013) study on a high school student population that was short of resources found a substantial correlation between students' academic success in an online learning program created via the schools and their level of DL. The study concluded that an enhanced atmosphere and simple access to DL positively impacted students' performance. In Turkey, Ozdamar-Keskin et al. (2015) conducted a survey technique research to assess the DL competency of open and remote university students. Their findings showed that students' ICT usage was limited to their primary DL skills.

The impact of DL on students' educational performance at the postsecondary education level was investigated by Abbas et al. (2019). The investigation used mixed techniques, and data were acquired via semi-structured interviews and a questionnaire. Eight hundred students were randomly chosen from ten universities to make up the sample. Statistical tests such as correlation, mean, and standard deviation were used. The findings showed that DL significantly impacted confidence and communication.

The three main feelings that EFL students have encountered most commonly are anxiety, enjoyment, and technostress. A review of the three pertinent emotions above reveals a strong correlation between these factors. As a result, while enjoying foreign language learning and

feeling anxious in the classroom are separate factors, they have some degree of relationship. As a result, this research can be beneficial in analyzing how DL affects technostress, FLA, AE, and linguistic proficiency. Consequently, the findings gained from this investigation may assist teachers in increasing EFL learners' positive emotions while reducing their negative emotions.

The review of earlier research revealed that while the role of digital technology, including the use of computers for instruction and learning, has been studied, these studies have not examined how DL affects the technostress, AE, FLA, and language achievement of Uzbek EFL learners. In other words, there are insufficient empirical investigations on the effectiveness of Chinese EFL learners' technostress, AE, FLA, and language achievement. To close this gap, the current investigation asked the following questions:

1. Does using DL positively affect the technostress of Uzbek EFL learners?
2. Does using DL positively affect the FLA of Uzbek EFL learners?
3. Does using DL positively affect the AE of Uzbek EFL learners?
4. Does using DL positively affect the language achievement of Uzbek EFL learners?

Research Hypotheses

1. Using DL does not positively affect the technostress of Uzbek EFL learners.
2. Using DL does not positively affect the FLA of Uzbek EFL learners.
3. Using DL does not positively affect the AE of Uzbek EFL learners.
4. Using DL does not positively affect the language achievement of Uzbek EFL learners.

Methods

Participants

The research included 70 EFL learners, ages 16 to 23, from one private English Language Institute in Tashkent, Uzbekistan (35 males and 35 females). They all had intermediate levels of English competence and were native Uzbek speakers. They were chosen among 139 EFL students using a convenience sampling method by administering the Oxford Quick Placement Test (OQPT). A total of 35 individuals were randomly assigned to the EG and CG. It should be mentioned that the respondents were informed that participation was entirely voluntary, and their parents and consent were secured.

Instruments

Preliminary English Test (PET)

PET was the first research instrument to evaluate the participants' proficiency levels. PET is a Cambridge qualifying test that includes speaking, listening, reading, and writing. The reliability of this test was 0.83 in this study based on the KR-21 formula. Three English experts in applied linguistics verified the appropriateness and validity of this.

Foreign Language Enjoyment Scale

To better understand the FLE of Uzbek college EFL learners, Jiang and Dewaele (2019) adapted and used the English Language Enjoyment Scale, a 10-item measure taken from the FLE. This study was conducted for two reasons: first, as Jiang and Dewaele (2019) noted, these items reflected both private and social dimensions of FLE in classroom learning, which is in line with the present study's context; second, and for a more thorough discussion, the researchers aim to compare the emotions of Uzbek high school students in FL classes with those of Uzbek college students. All items were positively phrased on a 5-point Likert scale, with a higher score indicating a higher level of FLE. "I did well in this English course" and "My English class is a pleasant learning setting" were two examples of example items. The scale's internal consistency in this research was strong (Cronbach alpha = 0.86). In addition, the validity of this scale was verified by three English professors in applied linguistics.

Foreign Language Classroom Anxiety Scale

Jiang and Dewaele (2019) created this scale, which included eight questions about bodily manifestations of anxiety, uneasiness, and confidence issues. The FLCAS items were modified by Jiang and Dewaele (2019) (Horwitz et al., 1986). The scale counts two things for mild anxiety and six items for severe anxiety. This scale employed a 5-point Likert style, where 1 represented strong agreement, and 5 represented severe disagreement. To ensure the construct validity of FLCAS, three English instructors read the items and found them appropriate for this study. Additionally, the results of Cronbach alpha indicated that the reliability of FLCAS was r=0.86.

Technostress Scale

This study made use of Wang and Chee Tan's (2022) technostress scale. There were thirteen items, with a 5-point Likert scale (1 being strongly agree and five being strongly disagree). Three scholars in the field of L2 proved the construct validity of the technostress scale in the

context of the present study. Also, Cronbach alpha (r=0.84) was used to gauge the scale's reliability in this investigation.

Language Learning Achievement Test

The final instrument was an achievement test with thirty objective items created in the study that evaluated each participant's ability in reading comprehension, grammar, and vocabulary. The test was created using the participants' course materials. A panel of experts in the field of English language acquisition attested to the validity of this test, and the KR-21 algorithm was used to determine its reliability (r=.86). To determine if the test could be administered to the target group, a pilot test was carried out on a separate group that was comparable to the target group. It is important to remember that this test and the previously described questionnaires were given both before and after the intervention. They served as the pre- and post-tests for the research together.

Data Collection and Analyses Procedures

The PET was used in the first phase to choose the homogeneous participants, confirming each person's general English proficiency and guaranteeing uniformity. Following their selection, the 70 intermediate subjects were split into EG and CG groups. Subsequently, both groups were given the technostress, FLA, AE, and language learning achievement pre-tests. There was a 30-minute time restriction for each exam. The researchers then used technology to teach the EG the book Touchstone 2, emphasizing DL and teaching them how to use it to acquire new English materials. Six lessons of Touchstone 2 were taught to the EG using a laptop, a projector, and a speaker. However, the CG was taught the same concepts using a more old-fashioned method. A laptop, a projector, and a speaker are examples of digital gear not used in the CG class. Three sessions each week totaled 24 sessions for the treatment. After all lessons were presented, the researchers used the aforementioned scales as posttests to gauge how the treatment affected the students' technostress, FLA, AE, and language acquisition achievement. The data was analyzed using the independent samples t-test and the one-way ANCOVA test after the pre- and post-test scores were gathered.

Results

The parametric statistics were used to analyze the data as the scores met a normal distribution. The following table provides the results for the pre- and post-tests for each variable.

Table 1. Participants' Descriptive Statistics in the Pre-tests

	group	N	Mean	Std. Deviation	Std. Error Mean
Enjoyment	CG	35	27.00	3.36	.56
	EG	35	25.94	4.24	.71
Language Achievement	CG	35	12.68	2.29	.38
	EG	35	13.54	2.25	.38
Anxiety	CG	35	17.80	3.07	.51
	EG	35	18.60	3.42	.57
Technostress	CG	35	27.65	5.17	.87
	EG	35	29.60	5.77	.97

The dependent variables' descriptive statistics (mean, standard deviation, and number of participants) are shown in Table 1. As can be seen, the two groups' mean scores on the pre-test for each variable are nearly identical. The mean scores suggest no notable variations between the groups' pre-test results.

Table 2. Participants' Inferential Statistics in the Pre-tests

	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Enjoyment	2.21	.14	1.15	68	.25	1.05	.91
			1.15	64.61	.25	1.05	.91
Language Achievement	.04	.82	-1.57	68	.12	-.85	.54
			-1.57	67.97	.12	-.85	.54
Anxiety	.30	.58	-1.02	68	.30	-.80	.77
			-1.02	67.23	.30	-.80	.77
Technostress	.68	.41	-1.48	68	.14	-1.94	1.31
			-1.48	67.20	.14	-1.94	1.31

To determine whether or not there was a significant difference between the pre-test results of the two groups, Table 2 employed an independent samples t-test. Given that all Sig values are more than .05., it can be shown that there was no statistically significant difference between the two groups. The two groups' levels of technostress, FLA, AE, and language learning achievement were equal before the treatment, it may be concluded.

Table 3. Participants' Descriptive Statistics in the Posttest of AE

Group	Mean	Std. Deviation	N
CG	30.17	5.60	35
EG	36.71	6.41	35
Total	33.44	6.82	70

Table 3 displays the descriptive results for the two groups on the AE posttest. The EG's typical score is 36.71, but the CG's mean score is 30.17. The EG group seemed to fare better than the CG group in the AE posttest.

Table 4. Participants' Inferential Statistics in the Posttest of AE

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	830.96	2	415.48	11.66	.00
Intercept	931.20	1	931.20	26.14	.00
Pre	81.80	1	81.80	2.29	.13
Group	804.35	1	804.35	22.58	.00
Error	2386.30	67	35.61		
Total	81507.00	70			
Corrected Total	3217.27	69			

After adjusting for our covariate, Table 4 tells us if the treatments were statistically substantially different. The researchers can tell that the EG group outperformed the CG in the AE posttest by looking at the significant values, or the "Sig." column.

Table 5. Participants' Descriptive Statistics in the Posttest of Language Achievement

Group	Mean	Std. Deviation	N
CG	14.00	2.53	35
EG	16.45	2.30	35
Total	15.22	2.70	70

In general, descriptive statistics are techniques employed to efficiently, logically, and meaningfully compute, characterize, and summarize research data that has been gathered. Table 5 displays the descriptive data for the language learning accomplishment posttest. The average score for the CG is 14,000, whereas the average score for the EG is 16,45.

Table 6. Participants' Inferential Statistics in the Posttest of Language Achievement

Group	Mean	Std. Deviation	N
CG	14.00	2.53	35
EG	16.45	2.30	35
Total	15.22	2.70	70

The results of ANCOVA using SPSS's General Linear Modeling technique are shown in Table 6. The findings suggest that the EG outperformed the CG in the language learning accomplishment posttest since there were statistically significant differences between the two groups' scores.

Table 7. Participants' Descriptive Statistics in the Posttest of FLA

Group	Mean	Std. Deviation	N
CG	19.91	5.20	35
EG	24.68	7.13	35
Total	22.30	6.64	70

Table 7 provides a numerical report of the descriptive statistics of the FLA posttest for both groups. According to the findings, the CG's mean score on the posttest of FLA is 19.91, whereas the EG's mean score is 24.68. The mean is probably the most well-known descriptive statistic.

Table 8. Participants' Inferential Statistics in the Posttest of FLA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1142.61	2	571.30	20.06	.00
Intercept	30.38	1	30.38	1.06	.30
Pretest	744.20	1	744.20	26.13	.00
group	269.96	1	269.96	9.47	.00
Error	1908.08	67	28.47		
Total	37861.00	70			
Corrected Total	3050.70	69			

The results of the one-way ANCOVA test, with Sig being.00, less than 0.05, demonstrates that the FLA posttests for the two groups differed significantly. Table 8 indicates that in the FLA posttest, the EG fared better than the CG.

Table 9. Participants' Descriptive Statistics in the Posttest of Technostress

Group	Mean	Std. Deviation	N
CG	30.97	6.35	35
EG	37.22	7.93	35
Total	34.10	7.79	70

Table 9 shows that the average score for the EG is 72.22, whereas the average score for the CG is 30.97. It seems that the EG outperformed the CG in the technostress posttest. The following table underwent a One-way ANCOVA test to determine whether or not the difference is significant.

Table 10. Participants' Inferential Statistics in the Posttest of Technostress

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1509.93	2	754.96	18.84	.00
Intercept	608.82	1	608.82	15.19	.00
Pre	824.77	1	824.77	20.58	.00
Group	427.61	1	427.61	10.67	.00
Error	2684.36	67	40.06		
Total	85591.00	70			
Corrected Total	4194.30	69			

With Sig being .00, less than 0.05, Table 10 shows a significant difference in the technostress posttest ratings between the two groups. As it happened, the EG outperformed the CG in the technostress posttest.

Discussion and Conclusion

This study examined how DL affected Chinese EFL learners' language learning success, FLA, AE, and technostress. The findings show that while DL improved language learning achievement and raised AE, it decreased technostress and FLA in the students. Our results support Belda-Medina's (2022) assertion that language and its use in daily life are significantly impacted by digital technology. According to recent research findings, DL encourages instructors to use digital tools (Gurevich et al., 2017; Hall et al., 2014; Gudmundsdottir & Hatlevik, 2018). Other research (Instefjord & Munthe, 2017; Hall et al., 2014; List, 2019;

Palacios-Hidalgo & Huertas-Abril, 2022; Mellati et al., 2015) have shown the advantages of DL.

These results were consistent with those of Amiri (2009), who found that DL and computer accessibility improved pupils' academic performance. Fairlie et al. (2010) corroborated the outcomes of this investigation and came to similar conclusions that there were significant favorable impacts on school graduation and other educational findings. The outcomes of the current study, which showed a favorable correlation between students' performance and DL, were consistent with those of Brown (2009). Also, the outcomes that were gained aligned with the findings of Abbas et al. (2019), who verified the impact of DL on pupils' academic performance at the postsecondary level.

Additionally, Spiteri and Chang Rundgren (2017), who examined life changes depending on DL, support the research findings. They discovered that, despite its drawbacks, this kind of literacy may foster the development of competent and imaginative members of society. Additionally, Tondeur et al. (2017) discovered through a combined study on in-service teachers that students' cognitive load could be decreased by increasing their level of DL through explicit and direct instruction via electronic books in technical, cognitive, and emotional-social fields.

Research shows that integrating technology into the classroom can increase student involvement. By incorporating technology into the classroom, the researchers also allow students to practice utilizing it and advance their technological literacy. Digitally literate learners have better language skills and are more conscious of choosing the appropriate words while speaking with others. These days, with everyone interacting via social media, education, and manners aid in interpersonal and productive interactions. The benefits of DL that have been highlighted may help to explain the findings of this investigation.

The other explanation for the findings of our study may be that digitally literate students are inherently more resourceful when it comes to locating reliable sources and retrieving accurate information when needed. This ability allows these students to save time and energy, which ultimately leads to increased productivity. Additionally, resourceful students are distinguished by their independent work habits, as they can complete tasks independently with little help. Nowadays, all students can use DL tools wherever and whenever they choose, as long as they know how to use them. Every student has a variety of technological devices, including laptops, phones, computers, smart TVs, and other gadgets. Outside of the classroom, they can be used by students for academic objectives, knowledge acquisition, and second language acquisition. They begin operating on their own, which also fosters independence.

Saving money and time is the most popular benefit of virtual learning, and it provides additional support for our results. Learners have the option of enrolling in free online courses or watching them on YouTube platforms. It doesn't matter which way they go; they may arrange their schedule and view the courses at times that work best for them, whether that be early in the morning or late at night. They also save money when they learn a language without leaving their house because they don't have to pay for food or transportation this time.

The fact that using digital media aids students in controlling their behavior is another explanation for the achieved outcomes. Students leave the classroom and head home where they may use social media to communicate with the outside world via messaging, texting, sharing images, and more. Being in a classroom might lead to boredom and dissatisfaction since they are used to regular personal contact. Acting out is a common way for many teenagers to find relief.

Students who like to work at their own pace have options thanks to virtual learning. Some students work extremely slowly; they can't finish a task in a short amount of time, but they will finish it correctly; others, on the other hand, finish tasks more quickly and receive higher grades. With online learning, these students may achieve better grades by completing the assigned work appropriately. Regardless of their speed, the instructor will verify that everything is done correctly. Furthermore, certain pupils require individualized instruction, but in a typical classroom, it is simpler for teachers to address a subject matter once to the entire class. Personalized learning is very challenging to do in a big classroom with strict time constraints (Chafe, 1999). With the tools for DL available today, anybody can learn on their own. This implies that students may accomplish things on their own time.

The study's outcomes demonstrate that DL had a useful effect on the technostress, FLA, AE, and language learning accomplishment of EFL students. The findings demonstrate how DL improved EFL learners' language acquisition and AE while lowering their technostress and FLA. It is clear from the data obtained that having a solid understanding of technology is crucial in today's linked environment. Misinformation spreads much too easily in this day and age due to the widespread use of social media and the simplicity with which it can be shared online. By training individuals on how to assess the reliability of internet sources, technology literacy can aid in the solution of this issue. Additionally, it may be said that it is critical now more than ever for students to acquire digital technology literacy abilities since researchers live in a world where technology influences everything. These abilities extend beyond only knowing how to operate a computer or smartphone. Rather, they entail analysis, critical thinking, and the capacity for clear digital communication of concepts.

Students must have a solid foundation in technological literacy as the field of technology continues to advance. Technology literacy includes a broad variety of abilities, from coding and programming to utilizing simple office productivity applications. Students will be more equipped to succeed in the contemporary job by honing these talents. Those who are tech-savvy will undoubtedly have an edge in the future, despite the opinion held by others that technology is a detriment. In summary, as EFL students are growing up in the "Information Age", when technology is affecting every part of their lives, digital skills are becoming essential for all students, especially those starting formal education early.

Because they are more at ease using technology than their classmates, students who possess technological literacy are more likely to take part actively in class activities. Students are more likely to be strongly encouraged to participate in class discussions and learning activities when they have a solid grasp of technology and can utilize it to communicate with professors and classmates. It is hard to survive a day in the modern world without utilizing technology of some kind. The researchers utilize it for a lot of things, including work, play, and communication. Even while technology has significantly enhanced our lives in many ways, using something beneficial excessively is possible. Overuse of technology can result in unhappiness, loneliness, and addiction. It's critical to understand the risks associated with overuse and to take precautions to maintain our equilibrium and health. Put another way, even if we should embrace technology's advantages, we also need to protect the next generation from the negative aspects of the virtual world. Because of this, people throughout the world are now concerned about these risks.

Regardless of age, a lot of our lives revolve around technology. Though not limited to younger age groups, younger generations do tend to rely more on technology and the internet. Since technology is used by people of all ages, everyone may gain from understanding technology literacy. The outcomes of this study have some implications for EFL students and teachers on the value of technology in learning and teaching. A teacher who is aware of how technology is changing will be able to help students discover new language learning contexts, assist them in comprehending online environments, and help them develop strategies for conducting research and choosing resources (such as identifying helpful resources for language study and assessment).

The results of this study can help educators integrate technology into their classes and assignments so that pupils can get experience with a diversity of instruments and apps. Giving kids who require further assistance resources and support is another method.

All students should be given the chance to acquire excellent technological literacy skills to equip them for success in a world that is changing quickly.

The results of this study may have consequences for those who create curricula. Technological developments have made it possible to provide digital materials for curricula that greatly aid in the teaching of DL. According to Mudra (2020), typical classroom environments limit students' time. Offering digital tools to curriculum authors offers doors for both instructors and students. It provides students with the chance to study any language about anything, anywhere, at any time.

There are various educational ramifications of this study for EFL students. Students need to acquire excellent technological literacy skills now more than ever as the world is more digitally connected. The capacity to utilize technology to solve issues and effectively express ideas is known as technological literacy. While some kids might already be computer savvy and "digital natives", others might require further assistance to catch up. Because of this, teachers must provide all of their kids the chance to advance their technological literacy. In the future, managing a firm will require a strong grasp of business technology.

The study's findings may influence students to become technologically literate to develop into effective learners who can quickly access the greatest online resources available to them where they are. Convenient online instruction delivery choices, such as 100% digital schooling, have made it possible for enthusiastic students to receive the greatest education possible at home. The sole need for this online learning benefit is technical literacy. The greatest educational experiences are now accessible to every student because of technology. Additionally, it has aided in achieving the goals of inclusiveness in the truest sense.

Students who possess DL are also better equipped to explore a vast array of rich internet resources. For pupils of all ages and IQ levels, there are plenty of accessible and reasonably priced online tools. They may receive tons of knowledge through mobile applications, internet portals, videos, audiobooks, podcasts, and various other online resources. These educational opportunities broaden the scope of learning outside of the classroom. And easily incorporate significant new features into their current body of knowledge. Being technologically literate is another step toward being an adult. The digital tools and capabilities that are now a part of our daily lives must be taught to students in this day and age. When people are technologically literate, they may take use of technology and improve the convenience of their life.

The study's findings on DL might be helpful to EFL students:

1. This can aid in their improvement as communicators. Writing clearly and succinctly is a critical skill for kids to have in a world where most of our communication happens online. DL can aid in the development of these abilities.

2. Has the potential to foster innovation. Utilizing digital technologies can lead to new opportunities for self-expression and creativity.

3. May promote teamwork. Nowadays, a lot of assignments and projects call for cooperation and teamwork, and having a solid understanding of DL may assist students learn how to collaborate with others online.

4. Able to get them ready for the workforce. The capability to utilize digital technology is becoming a prerequisite for a growing variety of industries, therefore students who master these abilities will have a distinct edge when applying for jobs.

5. May enhance research abilities. The internet has completely transformed how we obtain information, and to fully utilize this enormous resource, DL, and technical skills are required.

6. May increase engagement in learning. Digital technology has the capacity to enhance learning by making it more interactive and captivating, which can lead to better knowledge retention.

There are several restrictions on this study. One of them was the comparatively low number of disciplines, which was brought on by the students' lack of accessibility. As such, it is important to give careful consideration to the participants' representativeness. This research was performed at a private language school; more research with high school and university students is required. Pre- and post-tests were utilized in this study to gather data; it is highly advised that future research employ additional tools, such as interviews and attitude surveys, to gather more precise data about the impact of DL on language acquisition. Further research can also look at how DL affects other psychological factors such as motivation for language acquisition, academic fatigue, willingness to communicate, etc.

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