

Digital Humanities Practices and ESL Learning in Pakistani Universities and Colleges

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Received: 05-02-2026

Revised: 21-02-2026

Accepted: 06-03-2026

Published: 20-03-2026

ABSTRACT

*This study explore the role of digital humanities practices in improving and enhancing English as a Second Language (ESL) learning among learners in Pakistani universities and colleges. The research focuses to explore how digital tool such as AI-based writing application, digital libraries, online platforms support in the development of language skills such as vocabulary, grammar, writing techniques, reading and speaking fluency. A quantitative research design was used and a structured questionnaire was used a data collection instrument from 100 students studied in BS English Language & Literature and BS Linguistics. The data were analyzed through statistical Package for the Social Sciences (SPSS) by applying descriptive statistics. The results of the study highlight that a majority of respondents showed positive views regarding the use of digital tool and their role in language learning. The positive reports indicate that digital platforms prominently enhance engagement, language proficiency and learning outcomes. Respondents showed high level of agreement in areas such as vocabulary enhancement, academic writing improvement and the use of AI-based tools. However, they didn't show much interest in digital storytelling and online discussion, therefore, the level of agreement was low in this regard. The study concludes that digital humanities practices perform a critical and vital role in modern ESL education. It promotes interactive, flexible and learner-centered atmosphere. It indorses the education institutions to use the digital tools systematically and provide training to enhance their capacity in language learning contexts.*

**Keywords:** Digital Humanities, ESL Learning, Digital Tools, AI-Based Writing Tools, Pakistani Universities, Language Proficiency, Online Learning, SPSS Analysis

INTRODUCTION

The swift advancement of digital technologies has brought significant changes to academic practices worldwide, more especially in the field of language learning. One of the most remarkable development in this shift is the emergence of Digital Humanities (DH) as an interdisciplinary field that incorporates computational tools within traditional humanities disciplines to enhance teaching and research (Rodrigues and Corrieia, 2025). DH promotes new pedagogical ways that enhance learner interaction, collaboration, and autonomy.

In Pakistan, English is used as a second language and serves as a core element in Higher education serving both as medium of instruction and tool for socio economic mobility (Khan et al., 2025).

However, despite this importance, ESL learning is pivotal for learning but many universities in Pakistan are still using traditional, conventional teaching and learning methods. The Grammar Translation Method (GTM), which restricts students' communicative skills and became a barrier for their critical thinking enhancement (Ahmed et al., 2023). As a result, many Students struggle in achieving language proficiency, especially in domains like writing, vocabulary development and fluency (Shah et al., 2024). The blend of digital humanities practices into ESL classrooms provides a better solution for these problems. Digital tools like digital Storytelling, online platforms for collaboration and social media learning platforms help students to learn language and promote a dynamic participation (Farooq et al., 2025).

Additionally, Connectivist learning environment Supports productive learning through information sharing participatory learning which are more powerful for better and advanced language learning. Digital tools have engaged learners with different perceptions and resources (Ilyas & Asgher, 2024).

Digital sources provided by social media platforms are helping in learning language. They are helping in improving fluency and confidence by giving access to authentic material (Ajmal et al., 2023). Digital networks are actively support learners to get language knowledge by polishing language skills. Instead of all these benefits, digital humanities practices are still limited at university and college levels. There are different causes such as inadequate technological infrastructure, untrained teachers and unwillingness of institutes to accept the change (Sattar et al., 2023). Additionally the availability of digital sources in urban and rural areas is also a major problem. Rural areas in Pakistan are still deprived of the access of digital tools.

Keeping in view the issues and opportunities, the study wants to investigate the role played by digital humanities practices in ESL learning in Pakistani universities and colleges. It aims at exploring the impact of digital humanities practices in developing language skills. By exploring these factors the study is going to add in scholarship regarding digital practices in learning language and pedagogy of ESL.

## **LITERATURE REVIEW**

### **Conceptualizing Digital humanities**

Digital humanities is the integration of digital tools and methodologies in humanities discipline, including linguistics, literature and cultural studies. These practices involve the use of several better technologies such as text mining, digital archives and multimedia platforms that help the researchers to collect, analyze and share information with others (Rodrigues and correa, 2025). Digital humanities has shifted learning and teaching approaches from passive to interactive activities all these help students to engage in gathering more knowledge and using it practically rather than just receiving that knowledge.

Scholars note that digital humanities correspond with innovative learning theories such as constructivism and connectivism, which focused on student's independent learning, peer collaboration and digital interaction. Due to emergence of these technologies into academic practices, it has enhanced the way of thinking, creativity and digital learning and teaching skills that are essential in today's learning.

### **ESL learning in Pakistani Context**

English plays a significant role in Pakistan's educational system, functioning as a medium of guidelines in higher education and as a necessity for professional success.

Nevertheless, ESL (English as a Second Language) learners encounter various challenges, including limited exposure to authentic English, traditional teaching methods, and excessive dependence on rote

memorization (Shah et al, 2023). In many classrooms outdated methods like Grammar Translation Method (GTM) are still very common, these are heavily focused on grammar rules Instead of communication skills (Ahmed et al, 2023).

Consequently, students often feel reluctant while using English for academic and professional purposes. This points out the need of new and advanced teaching methods for engaging and active learning and enhanced real language use.

### **ICT integration in ESL education**

The emergence of Information and Communication Technology (ICT) in ESL teaching is becoming increasingly significant because it can foster students' learning results. ICT allows for multimedia content, interactive lessons, and instant communication. All of these help students to improve their language proficiency and communication skills (Khan et al, 2022). In Pakistan, teachers actively encourage the use of ICT. However, limited access to these technologies, lack of training, and insufficient support from schools often become obstacles to implementing ICT methods in the classroom (Scatter et al, 2023). Regardless of these problems, it is claimed in research that use of ICT in classrooms significantly improves students' language learning process and helps them to actively engage in learning activities.

## **RESEARCH METHODOLOGY**

### **Research Design**

A quantitative research design is adopted for this study to explore the effect of digital humanities practices on ESL learning in Pakistani universities and colleges. Survey method was used for the collection of data from students because through this we can systematically measure the attitudes, expectations, perceptions and experiences of the people (Creswell, 2014). It is the most suitable design for this research because it can easily and clearly explain the relationship of digital tool usage and language learning outcomes.

### **Population and Sample**

The population of the study is the undergraduates students enrolled in BS English Language & Literature and BS English Linguistics programs. The sample of 100 students was selected by using convenience sampling method. Public and private institutes were approached to select the participants and ensure the diversity samples were taken from different cities of Pakistan.

### **Research Instrument**

A structured questionnaire was used to collect the data. There are three sections of the instrument. Section A comprises on Demographic information. Section B is related to Digital Humanities Exposure and section C pertains questions about ESL proficiency. A 5 point Likert Scale is used to measure exposure and proficiency of learners.

### **Data collection Procedure**

The questionnaire was administered to participants online as well as physically. They were given the information about the purpose of the study and ensure them to keep their responses confidential.

**Data Analysis Procedure (SPSS)**

The data was analyzed through the IBM SPSS. The following statistical techniques were used:

- **Descriptive Statistics**

(Frequencies, percentages, mean, standard deviation) to summarize responses

- **Reliability Analysis**

Cronbach’s Alpha was used to measure internal consistency of the questionnaire

**ANALYSIS**

**Reliability Analysis**

Cronbach’s Alpha was used to measure internal consistency of the questionnaire

<b>Case Processing Summary</b>			
		N	%
Cases	Valid	100	100.0
	Excluded <sup>a</sup>	0	.0
	Total	100	100.0
a. Listwise deletion based on all variables in the procedure.			

**Explanation of Case Processing Summary**

The table presents information about the number of cases (responses) included in the statistical analysis.

**Valid Cases (N = 100, 100%)**

A total of 100 cases (100%) were included in the analysis. This indicates that all respondents provided complete data for the variables used in the analysis.

**Excluded Cases (N = 0, 0%)**

No cases were excluded from the analysis. This means: There were no missing values, no responses were removed due to incomplete data

**Listwise Deletion Note**

The note states:

**“Listwise deletion based on all variables in the procedure.”**

This means: If any respondent had missing data on any variable, their entire response would have been excluded. However, since 0 cases were excluded, it confirms that: All participants answered every question. The dataset is fully usable for analysis.

<b>Reliability Statistics</b>	
Cronbach's Alpha	N of Items
.855	14

**Explanation of Reliability Statistics**

The table presents the Cronbach’s Alpha reliability coefficient for the questionnaire used in the study.

**Cronbach’s Alpha ( $\alpha = 0.855$ )**

The value of Cronbach’s Alpha is 0.855, which indicates the internal consistency of the questionnaire.

In research, the following thresholds are commonly used:

- 0.9 and above = Excellent
- 0.8 – 0.9 = Good ✓
- 0.7 – 0.8 = Acceptable
- Below 0.7 = Weak

Therefore,  $\alpha = 0.855$  shows that the instrument has high reliability (good internal consistency).

The obtained Cronbach’s Alpha value ( $\alpha = 0.855$ ) indicates good internal consistency among the items, suggesting that the instrument is reliable for data collection and subsequent statistical analysis.

**Explanation of Demographic Statistics**

The table shows descriptive statistics (mean, median, mode, and standard deviation) for four demographic variables: sex, institute, program, and background of the respondents. A total of 100 valid responses were recorded for each variable, with no missing data, indicating a complete dataset suitable for analysis.

<b>Statistics</b>		Sex of the respondents	Institute of the respondents	Program of respondents	Background
N	Valid	100	100	100	100
	Missing	0	0	0	0
Mean		1.6400	1.8000	1.3400	1.4200

Median	2.0000	2.0000	1.0000	1.0000
Mode	2.00	2.00	1.00	1.00
Std. Deviation	.48242	.40202	.47610	.49604

**Sex of the Respondents**

The mean value is ( $M = 1.64$ ) which suggests that the majority of respondents belong to category “2” means female. The median (2.00) and mode (2.00) also confirm. The standard deviation ( $SD = 0.48$ ) highlights low variability which means responses are relatively consistent.

**Institute of the Respondents**

The mean ( $M = 1.80$ ) highlights that the majority of students belong to category “2” (e.g., private institutions). The median (2.00) and mode (2.00) further confirm that the majority of respondents are from this category. The standard deviation ( $SD = 0.40$ ) shows low variation among responses.

**Program of Respondents**

The mean value is ( $M = 1.34$ ) which indicates that majority of the respondents fall closer to category “1” (e.g., BS English Language & Literature). The median (1.00) and mode (1.00) confirm that category 1 is the most frequent. The standard deviation ( $SD = 0.47$ ) suggests moderate variation.

**Background of Respondents**

The mean ( $M = 1.42$ ) highlights that majority of the participants belong to category “1” (e.g., urban background). The median (1.00) and mode (1.00) confirm that category 1 is dominant. The standard deviation ( $SD = 0.49$ ) shows moderate variability.

**Explanation of variables of Digital Humanities Exposure**

**Explanation of Descriptive Statistics**

“I use digital platforms (AI tools, digital libraries, Google Docs) for academic English learning.”

Statistics		
N	Valid	100
	Missing	0
Mean		3.8200
Median		4.0000
Mode		4.00

Std. Deviation	.90319
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The table presents descriptive statistics for the above mentioned statement:

A total of 100 valid responses were recorded, with no missing data, which indicates a complete and reliable dataset for analysis.

**Mean (M = 3.82)**

The mean score of 3.82 (on a 5-point Likert scale) indicates that, on average, respondents tend to agree with the statement. The result indicates the positive overall attitude towards the use of digital tools in ESL learning as the value is close to 4 (agree) than 3 (Neutral).

**Median (Md = 4.00)**

The median value of 4.00 shows that the middle response falls in the “Agree” category. This confirms that at least half of the respondents selected “Agree” or higher.

**Mode (Mo = 4.00)**

The mode (most frequent response) is also 4 (Agree). It highlights that “Agree” is the most common response, reinforcing the trend of positive perception.

**Standard Deviation (SD = 0.90)**

The standard deviation of 0.90319 shows the degree of variation in responses. A value close to 1 suggests:

- Moderate variability
- Most responses are clustered around the mean
- Some variation exists, but not extreme

These results indicate that students normally use digital tools for English learning. Majority of the respondents shows positive attitude and the responses of participants were consistent with little variation.

<b>I use digital platforms (AI tools, digital libraries, google docs) for academic English learning.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	4.0	4.0	4.0
	Disagree	4	4.0	4.0	8.0
	Neutral	15	15.0	15.0	23.0
	Agree	60	60.0	60.0	83.0

	Strongly Agree	17	17.0	17.0	100.0
	Total	100	100.0	100.0	

The table shows the distribution of responses of students regarding the use of digital tool for English leaning.

Most of the students give the positive feedback towards the use of digital tools. 60% among 100 respondents agreed and 17% strongly agreed with the statement. It means that a considerable percentage (77%) of the respondents use digital tools for ESL learning.

Meanwhile, a very little proportion of the participants expresses disagreed. 4% strongly disagreed and 4% disagreed. It means 8% of the total participants do no use digital tools for ESL learning. On the other hand, 15% of the respondents remained neutral which indicates that they have very limited exposure regarding the use and effectiveness of these tools.

The cumulative percentage (83% responses) indicates towards agreement level which highlights the dominance of positive responses.

“I use digital tools to improve vocabulary and writing”.

<b>Statistics</b>		
N	Valid	100
	Missing	0
Mean		3.7700
Median		4.0000
Mode		4.00
Std. Deviation		.90849

The table presents descriptive statistics for the above mentioned statement:

A total of 100 valid responses were recorded, with no missing data, which indicates a complete and reliable dataset for analysis.

**Mean (M = 3.77)**

The mean value is 3.77 which shows that the participants normally agree with the statement. The value is close to 4 (agree) therefore, it indicates the positive inclination of participants regarding the use of digital tools for improving vocabulary and writing skills.

**Median (Md = 4.00)**

The median value (4.00) indicates that the middle response relates to the “agree” category which shows that half of the participants selected “agree” or “strongly agree”.

**Mode (Mo = 4.00)**

The mode is 4.00 which means the participants agreed with the statement which highlights the positive inclination.

**Standard Deviation (SD = 0.91)**

The standard deviation is close to 1 which indicates a little variation in responses. The majority of the respondents show agreement while the differences are few.

<b>I use digital tools to improve vocabulary and writing.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	3.0	3.0	3.0
	Disagree	5	5.0	5.0	8.0
	Neutral	22	22.0	22.0	30.0
	Agree	52	52.0	52.0	82.0
	Strongly Disagree	18	18.0	18.0	100.0
	Total	100	100.0	100.0	

The table presents the distribution of responses for the statement: “I use digital tools to improve vocabulary and writing.”

A prominent proportion of the respondents (70%) selected agree or strongly agree which highlights that majority of students actively use digital tools to increase their vocabulary and writing skills. 22% of the students selected Natural which means a few number of students use digital tools often or there are unaware of their use for language learning. A very little number (8%) of students reported negative responses (5% disagree and 3% strongly disagree). The cumulative proportion of 82% of respondents shows inclination towards using the digital tools for improving their vocabulary and writing skills.

**“I participate in digital storytelling or multimedia projects in English”**

The table presents descriptive statistics for the above mentioned statement:

A total of 100 valid responses were recorded, with no missing data, which indicates a complete and reliable dataset for analysis.

**Mean (M = 3.19)**

The mean score of 3.19 on a 5-point Likert scale is slightly above 3 (Neutral). This indicates that respondents are somewhat neutral to slightly positive, but overall do not strongly agree that they actively participate in digital storytelling or multimedia projects.

**Median (Md = 3.00)**

The median value of 3.00 shows that the middle response falls exactly in the “Neutral” category. This suggests that at least half of the respondents neither clearly agree nor disagree.

**Mode (Mo = 3.00)**

The mode is also 3.00, meaning the most frequent response is “Neutral.” This reinforces the finding that neutral responses dominate.

**Standard Deviation (SD = 1.04)**

The standard deviation of 1.04151 indicates the spread of responses. A value slightly above 1 suggests: the differences are higher as compare to previous item. Respondents have different levels of experience with digital storytelling.

<b>I participate in digital storytelling or multimedia projects in English</b>					
<b>Statistics</b>		<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
Valid	Strongly Disagree	5	5.0	5.0	5.0
N		Valid		100	
		Disagree	20	20.0	25.0
		Missing		0	
	Neturral	37	37.0	37.0	62.0
Mean				3.1900	
		Agree	27	27.0	27.0
Median				3.0000	
		Strongly Agree	11	11.0	100.0
Mode				3.00	
		Total	100	100.0	
Std. Deviation				1.04151	

The table presents the distribution of responses for the statement: I participate in digital storytelling or multimedia projects in English.

Out of 100% the largest group of respondents 37% selected Neutral which indicates that they are not sure or have limited exposure with digital storytelling or multimedia projects. 38% among the respondents (27% agree and 11% strongly agree) expressed

A combined 38% of respondents (27% Agree + 11% strongly Agree) reported positive participation which means some respondents participate in such activities often time. A total of 25% (20% Disagree + 5% Strongly Disagree) expressed negative responses that suggests a substantial amount of participants do not participate in digital storytelling or may have not access to relevant sources. By the Neutral category, cumulative percentage reaches 62%, meaning most responses fall in non-committal or lower participation levels. Only 38% fall into agreement categories.

**My teachers integrate digital tools into ESL instruction.**

Statistics		
N	Valid	100
	Missing	0
Mean		3.5600
Median		4.0000
Mode		4.00
Std. Deviation		.90252

The table presents descriptive statistics for the above mentioned statement:

A total of 100 valid responses were recorded, with no missing data, which indicates a complete and reliable dataset for analysis.

**Mean (M = 3.56)**

The mean score of 3.56 on a 5-point Likert scale shows that respondents normally expressed agreement. The value is above (3-Neutral) which means it the respondents expressed moderately positive perception of teacher’s use of digital tools.

**Median (Md = 4.00)**

The median value is 4.00 which indicates that the middle response is “Agree.” This value proposes that 50% of the respondents believe that teachers use digital tools in ESL instruction.

**Mode (Mo = 4.00)**

The mode is 4.00 (Agree), meaning the most frequently selected response is “Agree.” This reinforces the overall trend of positive perception.

**Standard Deviation (SD = 0.90)**

The standard deviation of 0.90252 indicates the level of variation in responses.

A value close to 1 suggests moderate variability.

<b>My teachers integrate digital tools into ESL instruction.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	3.0	3.0	3.0
	Disagree	9	9.0	9.0	12.0
	Neutral	27	27.0	27.0	39.0
	Agree	51	51.0	51.0	90.0
	Strongly Agree	10	10.0	10.0	100.0
	Total	100	100.0	100.0	

The table presents the distribution of responses for the statement: My teachers integrate digital tools into ESL instruction.

A proportion of 61% of respondents (51% agree and 10% strongly agree) expressed positive view which shows that a number of students believe that their teachers use digital tools in ESL instruction. 27% of the respondents expressed their views as Neutral which suggests that they are not certain or their teachers use digital tools off and on. Only 12% (9% Disagree + 3% Strongly Disagree) reported negative responses. This shows that very few students feel teachers do not use digital tools.

**I use AI-based writing tools to improve my English assignments.**

<b>Statistics</b>		
N	Valid	100
	Missing	0
Mean		3.8100
Median		4.0000
Mode		4.00
Std. Deviation		.92872

The table presents descriptive statistics for the above mentioned statement:

A total of 100 valid responses were recorded, with no missing data, which indicates a complete and reliable dataset for analysis.

**Mean (M = 3.81)**

The mean value of 3.81 indicates that the general response expressed the agreement of the respondents with the statement. Since the value is near to 4 (agree) therefore, the highlights the positive tendency towards the use of AI-writing tools for improving English assignments.

**Median (Md = 4.00)**

The median value of 4.00 shows that the middle response falls in the “Agree” category which is the indication that at least half of the respondents selected “Agree” or higher.

**Mode (Mo = 4.00)**

The mode is 4.00 (Agree) which is also the indication that the most frequently selected response is “Agree.” This reinforces the overall trend of positive perception and usage.

**Standard Deviation (SD = 0.93)**

The standard deviation of 0.92872 reflects the spread of responses. A value close to 1 highlights the adequate variation in responses.

<b>I use AI-based writing tools to improve my English assignments.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	3.0	3.0	3.0
	Disagree	8	8.0	8.0	11.0
	Neutral	12	12.0	12.0	23.0
	Agree	59	59.0	59.0	82.0
	Strongly agree	18	18.0	18.0	100.0
	Total	100	100.0	100.0	

The table presents the distribution of responses for the statement: I use AI-based writing tools to improve my English assignments.

A strong majority of 77% of respondents (59% agree and 18% strongly agree) expressed positive views. This clearly shows that most students actively use AI-based writing tools to improve their English assignments. The Neutral response is low. Only 12% expressed neutral value which shows that a handsome majority have clear opinions and experience with AL tools rather than uncertainty. Disagreement is very

low. Only 11% (8% disagree and 3% strongly disagree) with the statement. The cumulative percentage of agree category reaches 82% which indicates a strong shift towards agreement.

**I frequently read or write academic content online in English.**

<b>Statistics</b>		
N	Valid	100
	Missing	0
Mean		3.6600
Median		4.0000
Mode		4.00
Std. Deviation		.89013

The table presents descriptive statistics for the above mentioned statement:

A total of 100 valid responses were recorded, with no missing data, which indicates a complete and reliable dataset for analysis.

**Mean (M = 3.66)**

The mean score of 3.66 on a 5-point Likert scale indicates that respondents generally lean toward agreement. Since the value is above 3 (Neutral) and approaching 4 (Agree), it reflects a moderately positive tendency toward engaging in online academic reading and writing.

**Median (Md = 4.00)**

The median value of 4.00 shows that the middle response falls in the “Agree” category. This suggests that at least half of the respondents selected “Agree” or higher.

**Mode (Mo = 4.00)**

The mode is 4.00 (Agree), indicating that the most frequently selected response is “Agree.” This confirms that agreement is the dominant response trend.

**Standard Deviation (SD = 0.89)**

The standard deviation of 0.89013 indicates the spread of responses. A value below 1 suggests the Low to moderate variability or responses are relatively consistent

<b>I frequently read or write academic content online in English.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	2.0	2.0	2.0
	Disagree	8	8.0	8.0	10.0
	Neutral	26	26.0	26.0	36.0
	Agree	50	50.0	50.0	86.0
	Strongly Agree	14	14.0	14.0	100.0
	Total	100	100.0	100.0	

The table presents the distribution of responses for the statement: I frequently read or write academic content online in English.

A strong positive trend is expressed related to the statement as 64 % (50% agree and 14% strongly agree) of the respondents showed their inclination towards the category of agree. This indicates that the majority of students frequently engage in reading or writing academic content online in English. Only 26% expressed the category of Neutral which highlights that some respondents occasionally engaged or uncertain about their frequency of use. Only 10% (8% disagree and 2% strongly disagree) reported negative responses which highlights that very few of the respondents do not engage in online academic reading and writing.

**Digital humanities tools make English learning more engaging.**

<b>Statistics</b>		
N	Valid	100
	Missing	0
Mean		3.8100
Median		4.0000
Mode		4.00
Std. Deviation		1.04151

The table presents descriptive statistics for the above mentioned statement:

A total of 100 valid responses were recorded, with no missing data, which indicates a complete and reliable dataset for analysis.

**Mean (M = 3.81)**

The mean score of 3.81 on a 5-point Likert scale indicates that respondents generally agree with the statement. Since the value is close to 4 (Agree), it reflects a positive perception that digital humanities tools enhance engagement in English learning.

**Median (Md = 4.00)**

The median value of 4.00 shows that the middle response falls in the “Agree” category. This suggests that at least half of the respondents believe that digital tools make learning more engaging.

**Mode (Mo = 4.00)**

The mode is 4.00 (Agree), meaning the most frequently selected response is “Agree.” This confirms that agreement is the dominant response trend.

**Standard Deviation (SD = 1.04)**

The standard deviation of 1.04151 indicates the spread of responses. A value slightly above 1 suggests moderate to high variability, responses are somewhat **diverse** and students have **varying experiences** with digital humanities tools.

<b>Digital humanities tools make English learning more engaging.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	7	7.0	7.0	7.0
	Disagree	3	3.0	3.0	10.0
	Neutral	14	14.0	14.0	24.0
	Agree	54	54.0	54.0	78.0
	Strongly Agree	22	22.0	22.0	100.0
	Total	100	100.0	100.0	

The table presents the distribution of responses for the statement: Digital humanities tools make English learning more engaging.

A strong tendency towards the category of agree is expressed as 76% (54% agree and 22% strongly agree) with the statement. This indicates that most students believe digital humanities tools make English learning more engaging. Only 14% of the respondents selected Neutral which suggests that: Some students may have limited experience, or they are uncertain about the level of engagement. Only 10% (7% Strongly Disagree + 3% Disagree) expressed negative opinions. This shows that very few students reject the usefulness of digital tools.

**Explanation of variables of ESL Proficiency**

**Explanation of Descriptive Statistics**

**Using digital tools improves my English vocabulary.**

Statistics		
N	Valid	100
	Missing	0
Mean		3.9600
Median		4.0000
Mode		4.00
Std. Deviation		.81551

The table presents descriptive statistics for the above mentioned statement:

A total of 100 valid responses were recorded, with no missing data, which indicates a complete and reliable dataset for analysis.

**Mean (M = 3.96)**

The mean score of 3.96 on a 5-point Likert scale indicates that respondents generally agree with the statement. Since the value is very close to 4 (Agree), it reflects a strong positive perception that digital tools contribute to vocabulary improvement in English.

**Median (Md = 4.00)**

The median value of 4.00 shows that the middle response falls in the “Agree” category. This suggests that at least half of the respondents believe that digital tools help improve vocabulary.

**Mode (Mo = 4.00)**

The mode is 4.00 (Agree), meaning the most frequently selected response is “Agree.” This confirms that agreement is the dominant response trend.

**Standard Deviation (SD = 0.82)**

The standard deviation is 0.81551. A value below 1 suggests little variation in responses. Moreover respondents have similar positive opinions and are fairly consistent.

<b>Using digital tools improves my English vocabulary.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	4.0	4.0	4.0
	Disagree	1	1.0	1.0	5.0
	Neutral	8	8.0	8.0	13.0
	Agree	69	69.0	69.0	82.0
	Strongly Agree	18	18.0	18.0	100.0
	Total	100	100.0	100.0	

The table presents the distribution of responses for the statement: Using digital tools improves my English vocabulary.

A clear majority of 87% (69% Agree + 18% Strongly Agree) indicates that the positive view of the respondents. This indicates that the vast majority of students **perceive digital tools as highly effective for improving their English vocabulary**. A little proportion of 8% selected Neutral. A very few respondents disagree with the statement. Only 5% (4% disagree and 1% strongly disagree) expressed negative view. By the **Agree category**, cumulative percentage reaches **82%**, indicating a strong positive trend including **Strongly Agree**, the total positive cumulative percentage reaches **100%**, confirming broad consensus among students.

**Digital platforms improve my academic writing skills.**

<b>Statistics</b>		
N	Valid	100
	Missing	0
Mean		3.8300
Median		4.0000
Mode		4.00
Std. Deviation		.84154

The table presents descriptive statistics for the above mentioned statement:

A total of 100 valid responses were recorded, with no missing data, which indicates a complete and reliable dataset for analysis.

**Mean (M = 3.83)**

The mean score of 3.83 on a 5-point Likert scale indicates that respondents generally agree with the statement. Since the value is above 3 (Neutral) and approaching 4 (Agree), it reflects a positive perception that digital platforms enhance academic writing skills.

**Median (Md = 4.00)**

The median value of 4.00 shows that the middle response falls in the “Agree” category. This means that at least half of the respondents perceive improvement in writing skills due to digital platforms.

**Mode (Mo = 4.00)**

The mode is 4.00 (Agree), indicating that the most frequently selected response is “Agree.” This confirms that agreement is the dominant response pattern among students.

**Standard Deviation (SD = 0.84154)**

The standard deviation of 0.84154 indicates the different responses. A value below 1 suggests: low variability among responses, students’ perceptions are relatively consistent and most students share similar positive views.

<b>Digital platforms improve my academic writing skills.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	1.0	1.0	1.0
	Disagree	8	8.0	8.0	9.0
	Neutral	15	15.0	15.0	24.0
	Agree	59	59.0	59.0	83.0
	Strongly Agree	17	17.0	17.0	100.0
	Total	100	100.0	100.0	

The table presents the distribution of responses for the statement: Digital platforms improve my academic writing skills.

A vital majority of respondents 76% (59% agree and 15% strongly agree) expressed positive view towards the statement. This indicates that most students perceive digital platforms as effective in improving their academic writing skills. About 15% of respondents selected Neutral. This suggests that some students are uncertain about the impact of digital platforms on their writing skills or have mixed experiences. Only 9% (1% Strongly Disagree + 8% Disagree) expressed negative opinions. This shows that very few students feel digital platforms do not help their writing. By the Agree category, cumulative percentage reaches 83%, indicating strong overall agreement including Strongly Agree, the total cumulative percentage reaches 100%, showing widespread positive perception.

**I feel more confident speaking English after engaging in online spaces.**

Statistics		
N	Valid	100
	Missing	0
Mean		3.6900
Median		4.0000
Mode		4.00
Std. Deviation		.91778

The table presents descriptive statistics for the above mentioned statement:

A total of 100 valid responses were recorded, with no missing data, which indicates a complete and reliable dataset for analysis.

**Mean (M = 3.69)**

The mean score of 3.69 on a 5-point Likert scale indicates that respondents generally agree with the statement. Since the value is above 3 (Neutral) and approaching 4 (Agree), it reflects a moderate positive perception that online engagement increases speaking confidence.

**Median (Md = 4.00)**

The median value of 4.00 shows that the middle response falls in the “Agree” category. This indicates that at least half of the students feel more confident speaking English after using online platforms.

**Mode (Mo = 4.00)**

The mode is 4.00 (Agree), meaning that the most frequently selected response is “Agree.” This confirms that agreement is the dominant trend among students.

**Standard Deviation (SD = 0.91778)**

The standard deviation of 0.91778 indicates the spread of responses. A value close to 1 suggests: moderate variability among responses, some students feel very confident, while others may feel less confident and overall, responses are fairly consistent but show individual differences

<b>I feel more confident speaking English after engaging in online spaces.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	3.0	3.0	3.0

Disagree	6	6.0	6.0	9.0
Neutral	26	26.0	26.0	35.0
Agree	49	49.0	49.0	84.0
Strongly Agree	16	16.0	16.0	100.0
Total	100	100.0	100.0	

The table presents the distribution of responses for the statement: I feel more confident speaking English after engaging in online spaces.

A majority of 65% of respondents (49% Agree + 16% Strongly Agree) showed positive opinions. It highlights that the majority of students feel more confident speaking English after participating in online activities. 26% of the respondent selected Neutral which means that respondents are uncertain about the effect of online spaces on their speaking confidence or have mixed experiences. Only 9% (3% strongly disagree and 6% disagree) reported negative views. By the Agree category, cumulative percentage reaches 84%, showing strong overall agreement including Strongly Agree, the total cumulative percentage reaches 100%, confirming broad consensus among students.

**I receive helpful feedback through digital platforms.**

Statistics		
N	Valid	100
	Missing	0
Mean		3.6400
Median		4.0000
Mode		4.00
Std. Deviation		.82290

The table presents descriptive statistics for the above mentioned statement:

A total of 100 valid responses were recorded, with no missing data, which indicates a complete and reliable dataset for analysis.

**Mean (M = 3.64)**

The mean score of 3.64 on a 5-point Likert scale indicates that respondents generally agree with the statement. Since the value is above 3 (Neutral) and close to 4 (Agree), it reflects a moderate positive perception that digital platforms provide useful feedback.

**Median (Md = 4.00)**

The median value of 4.00 shows that the middle response falls in the “Agree” category. This suggests that at least half of the students perceive digital feedback as helpful.

**Mode (Mo = 4.00)**

The mode is 4.00 (Agree), meaning the most frequently selected response is “Agree.” This confirms that agreement is the dominant response trend.

**Standard Deviation (SD = 0.82290)**

The standard deviation of 0.82290 indicates the spread of responses. A value below 1 suggests: low variability in responses, most students have similar perceptions regarding the helpfulness of digital feedback and responses are fairly consistent.

<b>I receive helpful feedback through digital platforms.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	2.0	2.0	2.0
	Disagree	4	4.0	4.0	6.0
	Neutral	34	34.0	34.0	40.0
	Agree	48	48.0	48.0	88.0
	Strongly Agree	12	12.0	12.0	100.0
	Total	100	100.0	100.0	

The table presents the distribution of responses for the statement: I receive helpful feedback through digital platforms.

A combined 60% of respondents (48% Agree + 12% Strongly Agree) expressed positive opinions. This indicates that most students perceive digital platforms as providing helpful feedback. About 34% of respondents selected Neutral. This suggests that a substantial portion of students may be uncertain about the effectiveness of feedback, or their experiences with digital feedback vary. Only 6% (2% Strongly Disagree + 4% Disagree) reported negative perceptions. This shows that very few students feel feedback from digital platforms is unhelpful. By the Agree category, cumulative percentage reaches 88%, indicating strong overall agreement including Strongly Agree, the total cumulative percentage reaches 100%, confirming that all students’ responses fall within the scale and most are positive

**My grammar improves through digital practice.**

Statistics		
N	Valid	100
	Missing	0
Mean		3.7600
Median		4.0000
Mode		4.00
Std. Deviation		.91143

The table presents descriptive statistics for the above mentioned statement:

A total of 100 valid responses were recorded, with no missing data, which indicates a complete and reliable dataset for analysis.

**Mean (M = 3.76)**

The mean score of 3.76 on a 5-point Likert scale indicates that respondents generally agree with the statement. Since the value is above 3 (Neutral) and approaching 4 (Agree), it reflects a moderate positive perception that digital practice contributes to grammar improvement.

**Median (Md = 4.00)**

The median value of 4.00 shows that the middle response falls in the “Agree” category. This suggests that at least half of the students perceive improvement in grammar skills through digital practice.

**Mode (Mo = 4.00)**

The mode is 4.00 (Agree), indicating that the most frequently selected response is “Agree.” This confirms that agreement is the dominant trend among students.

**Standard Deviation (SD = 0.91143)**

The standard deviation of 0.91143 indicates the spread of responses. A value close to 1 suggests: moderate variability among responses, some students may experience more improvement, while others may feel less impact and overall, responses are fairly consistent.

<b>My grammar improves through digital practice.</b>				
	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Strongly Disagree	3	3.0	3.0	3.0
	Disagree	5	5.0	5.0	8.0
	Neutral	23	23.0	23.0	31.0
	Agree	51	51.0	51.0	82.0
	Strongly Agree	18	18.0	18.0	100.0
	Total	100	100.0	100.0	

The table presents the distribution of responses for the statement: My grammar improves through digital practice.

A major percentage of 69% (51% agree and 18% strongly agree) expressed positive view related to the statement. It shows that majority of respondents think digital practices are affective in improving grammar skills. 23% remained Neutral and are uncertain about the role of digital practices in improving grammar skills. Only 8% (3% strongly disagree and 5% disagree) of the respondent didn't believe in the role of digital practices in the improvement of grammar skills. By the Agree category, cumulative percentage reaches 82%, indicating strong overall agreement Including Strongly Agree, the total cumulative percentage reaches 100%, showing broad positive perception among students

**I actively participate in English discussions online.**

Statistics		
N	Valid	100
	Missing	0
Mean		3.1200
Median		3.0000
Mode		3.00
Std. Deviation		1.00785

The table presents descriptive statistics for the above mentioned statement:

A total of 100 valid responses were recorded, with no missing data, which indicates a complete and reliable dataset for analysis.

**Mean (M = 3.12)**

The mean score of 3.12 on a 5-point Likert scale indicates that respondents are slightly above neutral in their participation. Since the value is just above 3 (Neutral), it reflects a moderate tendency among students to engage in online English discussions, but participation is not very strong.

**Median (Md = 3.00)**

The median value of 3.00 shows that the middle response falls in the “Neutral” category. This suggests that half of the students neither actively participate nor avoid online discussions, indicating mixed engagement levels.

**Mode (Mo = 3.00)**

The mode is 3.00 (Neutral), meaning the most frequently selected response is Neutral. This confirms that neutral participation is the dominant trend, with many students unsure or moderately engaged.

**Standard Deviation (SD = 1.00785)**

The standard deviation of 1.00785 indicates the spread of responses. A value close to 1 suggests: moderate variability among students’ participation levels, some students actively participate, while others rarely engage and responses are less consistent compared to other items like grammar or writing.

<b>I actively participate in English discussions online.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	5.0	5.0	5.0
	Disagree	21	21.0	21.0	26.0
	Neutral	40	40.0	40.0	66.0
	Agree	25	25.0	25.0	91.0
	Strongly Agree	9	9.0	9.0	100.0
	Total	100	100.0	100.0	

The table presents the distribution of responses for the statement: I actively participate in English discussion online.

The largest group is Neutral (40%), indicating that many students neither actively participate nor completely avoid online discussions. This suggests moderate engagement overall. A combined 34% of respondents (25% Agree + 9% Strongly Agree) reported active participation. This shows that about one-third of students actively engage in online English discussions. A combined 26% (5% Strongly Disagree + 21% Disagree) expressed low or no participation. This indicates that a significant proportion of students are hesitant or reluctant to participate online. By the Agree category, cumulative percentage reaches 91%, showing that

when neutral responses are included, most students are at least somewhat engaged or open to participation. The total cumulative percentage of 100% confirms all responses fall within the scale.

**I feel that digital exposure enhances my overall English proficiency.**

<b>Statistics</b>		
N	Valid	100
	Missing	0
Mean		3.5800
Median		4.0000
Mode		4.00
Std. Deviation		.86667

The table presents descriptive statistics for the above mentioned statement:

A total of 100 valid responses were recorded, with no missing data, which indicates a complete and reliable dataset for analysis.

**Mean (M = 3.58)**

The mean score of 3.58 on a 5-point Likert scale indicates that respondents generally agree with the statement. Since the mean is above 3 (Neutral) and approaching 4 (Agree), it reflects a moderate positive perception that digital exposure contributes to overall English proficiency.

**Median (Md = 4.00)**

The median value of 4.00 shows that the middle response falls in the “Agree” category. This indicates that at least half of the students perceive digital exposure as beneficial for improving their English skills.

**Mode (Mo = 4.00)**

The mode is 4.00 (Agree), meaning the most frequently selected response is “Agree.” This confirms that agreement is the dominant response trend among students.

**Standard Deviation (SD = 0.86667)**

The standard deviation of 0.86667 indicates the spread of responses. A value below 1 suggests: low to moderate variability among responses, most students have similar perceptions about the positive impact of digital exposure and responses are fairly consistent.

<b>I feel that digital exposure enhances my overall English proficiency.</b>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	5.0	5.0	5.0
	Disagree	6	6.0	6.0	11.0
	Neutral	19	19.0	19.0	30.0
	Agree	66	66.0	66.0	96.0
	Strongly Agree	4	4.0	4.0	100.0
	Total	100	100.0	100.0	

The table presents the distribution of responses for the statement: I feel that digital exposure enhances my overall English proficiency.

Majority of the respondents expressed positive view related to the statement. A combined 70% of respondents (66% Agree + 4% Strongly Agree) expressed positive opinions. This indicates that most students perceive digital exposure as enhancing their overall English proficiency. About 19% of respondents selected Neutral, suggesting that a smaller portion of students are uncertain about the impact of digital exposure on their language proficiency. Only 11% (5% Strongly Disagree + 6% Disagree) reported negative perceptions. This shows that very few students feel digital exposure does not improve their overall English skills. By the Agree category, cumulative percentage reaches 96%, showing strong overall agreement Including Strongly Agree, the total cumulative percentage reaches **100%**, confirming that most responses are positive.

## CONCLUSION

This study investigated the role of digital humanities tools in improving English language learning among students in Pakistani universities and colleges. The results highlight that digital tools such as AI-based writing assistants, digital libraries, online collaborative platforms and multimedia resources, have a positive effect on different aspects of English proficiency. Digital tools help in vocabulary development, grammar improvement, writing skills, reading understanding and overall language proficiency. Respondents believe in that the use of digital platforms not only assisted language practice but also made learning more interesting, interactive and effective aligning with contemporary pedagogical trends in ESL education.

A major proportion of the respondents considered the use of digital use and practices are effective. The practices such as active participation in online discussion and digital storytelling projects showed moderate engagement which suggested that some of the respondents need extra guidance, motivation or structured tasks to be benefited from collaborative digital practices.

Generally, the research exposed the relationship between digital humanities tools into ESL instruction can help in language learning. The result indicate that universities and colleges must systematically integrate digital sources, encourage collaborative online activities and offer training on AI tools and digital platforms to enhance their educational impact. By implementing these suggestions, institutions can improve their student's linguistic skills, self-confidence, and readiness for academic and professional contexts.

In conclusion, this study asserts that there is a strong integration between digital humanities practices and ESL education in Pakistan. Researchers can further explore the longitudinal effects of sustained digital engagement and search the impact of specific AI tools or multimedia interactions on student outcomes, further empowering evidence-based digital pedagogy in higher education.

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