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Need Analysis of Digital Communication Tools in Real World Context: A Study of Usability, Practices and Perception of Pakistani Higher Education Aspirants of English Majors

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Abstract

This study explores the usability, practices, and perceptions of digital communication tools among applicants for English Major studies at colleges in Pakistan. These tools are rapidly adopted in this context, influencing academic success. We aim to uncover usage habits, understand how individuals feel about the tools they utilize in language studies and teamwork, and identify which tools are most effective based on various factors. To achieve this, we employed a quantitative methodology. A survey research instrument in the form of a questionnaire was disseminated via Google Forms, yielding 132 responses from educators across the country who participated at different times. The first part of the questionnaire covered demographic details, the second part focused on the frequency of tool usage, and the third and fourth sections measured usability and perceptions, respectively. The results were analysed using descriptive statistics (frequency tables and percentages) with SPSS version 25 to discern trends in the adoption of tools. Findings indicate that WhatsApp (80.3%) and social media platforms are the dominant digital tools, with 84.85% enhancing education; however, digitized Kahoots (40.91%) are less popular due to barriers in digital literacy and infrastructure. Students also expressed positive sentiments about two features: they support the use of digital communication tools (90.91% agree). The study concludes that collaboration and language learning are enhanced through digital tools, while discrepancies in digital literacy and infrastructure result in unequal learning outcomes.

Key Terms: Need Analysis, Digital Communication Tools, Real World Context, Usability, Practices, Perception, English Majors, Higher Education Aspirants

Introduction

In the age of digital communication, tools have transformed the learners how to learn from one another, making significant changes to the educational interface at the university level. With the upsurging phenomenon of digital communication platforms such as social media, language learning apps, and virtual meeting tools, higher education aspirants are needed to be already familiar with such technology. Such tools can be employed in academic use to develop oneself, improve connections with others, and learn together (Aljawrneh, 2020). The move towards digital learning environments has been accelerated by the global impact of the COVID-19 pandemic, which makes the necessity of having an efficient online system of

communication and learning (Adedoyin & Soykan, 2023). As students continue learning, they utilise many digital tools to support their learning, connect with others, and enter global information networks (Sleeman et al., 2020).

Platforms like Facebook, WhatsApp, and Instagram have become significant parts of students' digital communication, offering a space for academic discussion, peer interaction, and resource sharing (Coman et al., 2021). WhatsApp, for example, has been widely adopted because it is easy to access and use, allowing students to participate in group conversations, share study materials, and plan events (Dahdal, 2020; Cronje & Zyl, 2022). These tools were initially designed for interpersonal and professional interactions, and their growing use in academic settings further exemplifies the versatility and potential of these tools in fostering learning at a distance (Nykyporets & Boiko, 2024).

Additionally, there has been a surge in apps designed to help students learn languages, such as Duolingo and Babbel, which offer students a creative way to practice and improve their skills. Through gamification and adaptive learning technologies, these apps tailor the language learning experience to the individual user, resulting in a more interactive and productive learning process (Liu, 2024). Applications for studying languages have been known to enhance students' language acquisition through interactive, mobile studying opportunities (Li, 2024). Nevertheless, the degree to which these apps are embedded in students' academic lives still varies, such that some students use these apps regularly, while others do so rarely (McHaney, 2023).

Besides social media and language apps, instant communication platforms like Zoom and Google Meet have become increasingly crucial for synchronous online learning and virtual classrooms (Ironsi, 2022). This allows students to engage in live chats, webinars, and virtual conferences. At this point, the availability of these tools has become more prevalent during distance learning. Still, it has also proven highly beneficial for students learning in remote and hybrid settings, allowing learning to continue despite physical barriers (Raees et al., 2020). Students need to know to embrace these digital tools while balancing them with fundamental face-to-face interactions. However, the transition towards virtual learning has raised many concerns about social engagement and a decline in face-to-face communication (Ejolie et al., 2022).

Digital communication tools and higher education have also intersected, and it needs to ask what role social media plays in learning. One such use of social media in the educational

process is that, according to several researchers, social media improves the quality of education through peer collaboration, continuous networking and access to various perspectives (Tran, 2021). Others warn against over dependence on these platforms, emphasising the danger that they will detract from actual learning and telling that overuse can lead to misinformation and the digital divide, where some students may not have access to these tools (Kalibebe et al., 2025). While there are some concerns, the evidence is clear that thoughtfully and intentionally used digital communication tools can make a big difference in learning outcomes.

In the ever-changing landscape of higher education, digital communication tools have become integral to the academic practices of students pursuing English majors, reshaping how they study, share with others, and understand knowledge systems worldwide. Accordingly, WhatsApp, Zoom, and social media platforms such as Facebook and Instagram provide environments for students to exchange skills, resources, and practical experience in language learning effectively. Language learning apps like Duolingo and Grammarly expedite vocabulary acquisition and writing precision while addressing the specific challenges faced by English majors (Amina, 2024). These tools are particularly important at this stage of higher education. Proficiency in academic English is essential for achieving success in academia; however, it is also crucial globally for communication, especially for future job seekers from non-English speaking backgrounds who need a working knowledge of English (Akther, 2022). If one is careless in adopting these tools, they may encounter problems. With various systems to learn and practice simultaneously, the potential for error is significant. Students from non-technical backgrounds often lack digital learning skills, which can lead to struggles with complex Learning Management Systems such as Blackboard or D2L.

Meanwhile, the situation deteriorates rapidly in developing countries where, for instance, Djibouti requires electricity merely to operate basic or outdated computers. Private school students compete on advanced systems, leaving many without the resources that could give them a fair chance. The digital divide is harsh, disadvantaging students who find themselves with limited control over their circumstances (Helsper, 2021). Furthermore, reliance on cloud-based platforms is fraught with dangers today. Not only can private information vanish in an instant due to a misclick, but personal information may also be grossly shared by individuals who gain access to different research institutes' server memories, potentially resurrecting data previously deemed lost! Security risks associated

with cloud computing present a complex combination of issues, including data theft and fraudulent phishing emails. These arise from trust and privacy concerns with cloud computing platforms, where users can no longer discern secure computers from untrustworthy ones (Saleem et al., 2023). Moreover, long-term use of digital tools can lead to user fatigue, adversely affecting students' concentration and their ability to achieve academic goals (Chen & Qin, 2024). Instructional quality, digital learner support, student involvement in the instructional process, and integration of text and video all play significant roles in favorable reviews. On one hand, digital communication tools indeed render English study more feasible (Holozsai & Jozef, 2024). This observation extends to present research, revealing that individuals with higher incomes tend to utilize more digital communication tools. Language education cannot afford to neglect technology (Kulkulsk-Hulme et al., 2023). On the other hand, mobile phones and tablets are becoming significant resources for learning English. This virtual, digital interface may encourage students to exceed other homework expectations or may simply represent another well-defined avenue for English majors to engage with their peers nationally and internationally in the English language. These tools also enable students to interact with native speakers, access resources in various languages, and participate in virtual seminars that facilitate mastery of academic English and global discourse. Herein lies the greatest opportunity for English majors of Pakistan (Zahid et al., 2024). Research addresses infrastructure development, digital literacy training, and reliable platforms to ensure that tools are genuinely accessible and can perform optimally. If this is accomplished, educational outcomes for aspiring English majors of Pakistan will be significantly enhanced.

Hence, this study explores the usability, practices, and perceptions of digital communication tools by higher education aspirants. The research examines students' use of these tools, providing an overview of how these platforms can improve educational experiences. It also intends to explore the role of these methods in enhancing global engagement and communication skills in higher education.

Problem Statement

With numerous social media platforms, language learning apps, virtual meeting tools, and other digital resources rapidly adopted in higher education, learning environments have been changed forever. Although these tools are widely used, questions remain about whether and how they impact academic success, as well as what factors drive students to favour particular

platforms. This study aims to address these limitations by exploring the usability, usage, and perceptions of higher education aspirants regarding digital communication tools and identifying clearer educational value in them. Practical usability can lead to greater effectiveness in EFL knowledge and research for students majoring in English in higher education.

Objectives

- To understand the likely usage patterns of digital communication tools for English Major higher education aspirants of Pakistan.
- Investigate the perceptions and usage of digital communication tools and the strategies to provide language-focused learning and collaboration.
- To investigate the interrelationship of factors affecting the popularity and operation of social network platforms, language learning applications, and real-time interaction tools in higher education.
- To propose strategies for the practical usability of digital tools for Pakistani higher education English Major students for their future paradigm.

Research Questions

1. Among higher education aspirants of the English Majors in Pakistan, who use the digital communication tools more, and who use them less?
2. To what extent do higher education aspirants find using digital communication tools for academic collaboration and language learning effective?
3. What conditions shape the use and effectiveness of social media, language learning apps, and real-time interaction tools in higher education?
4. What strategies should be adopted for the digital communication tools by higher education aspirants of the English Majors in Pakistan?

Significance of the Study

This study is significant because it enhances the understanding of the expanding role of digital communication tools in higher education. For educators and institutions to improve their digital strategies for learning outcomes, it is good for them to understand how students use social media, language applications, and virtual-interactive platforms. The results can inform further how digital communication tools promote collaboration, engagement, and language learning in educational settings. Moreover, the study provides information to policymakers and educational stakeholders regarding the effectiveness of these tools and their

ability to address and overcome challenges encountered during the transition to online & hybrid learning environments.

Literature Review

Digital Communication Tools and their Usability by Higher Education Aspirants

Digital tools in higher education have transformed the learning experience for students around the globe. The digital tools, like Learning Management Systems (LMS), online collaboration tools, AI-based tutoring programs, and VR classrooms, support accessibility and engagement in academic contexts (Jothkumar et al., 2025). This technology allows students to access the learning material from anywhere, making it more flexible and personalised learning pathways.

There is a significant discrepancy at different levels globally with respect to the adoption of these technologies. Developed nations are at the highest level of technological integration, while developing countries, Pakistan included, struggle with infrastructure and access (Jamil, 2020). Government policies, institutional investments, and technological infrastructure for students and educators influence the usability of digital tools.

In English language higher education, digital tools enable language transfer through interactive platforms, gamification, and AI-powered personalised learning experiences (Hussain et al., 2024). For example, research has shown that digital tools (e.g., Duolingo, Grammarly, and Google Classroom) improve vocabulary retention, writing skills, and pronunciation by providing immediate feedback and adaptive learning environments (Han, 2025). Their applicability, nonetheless, is contingent on digital literacy, internet access, and institutional support, which differ worldwide (Evurulobi et al., 2024). In Pakistan's context, some barriers, like limited digital literacy, unstable internet services, and financial issues, suppress these tools among higher education institutions (Qazi et al., 2024).

Digital-oriented communication tools like Zoom, MS Teams, WhatsApp, and Google Meet have revolutionised educational interaction at present, especially during the Partial and full closure of educational institutes (Khrisat & Fakhrouri, 2024). Such tools facilitate synchronous and asynchronous learning, whereby students can engage in discussions, access course materials, and collaborate on assignments regardless of their physical location (Barbetta, 2023).

These digital communication tools provide several advantages. However, a few challenges are affecting the usability of digital communication tools. ICT infrastructure and stable

connections to the web are found in developed nations with their more advanced digital pedagogical approaches. In contrast, in developing countries, these building blocks are hindered by limited access to internet bandwidth, low levels of digital literacy, and inefficient funding models for technology (James, 2021). Usability issues concerning the complexity of the user interface, security, and data privacy are also important factors influencing students' engagement and effective learning (Lasekan, et a;., 2024). Additionally, accessibility options for disabled students remain challenging, as many digital resources are not designed to support different learning requirements (Kocdar & Bozkurt, 2023).

Practices of Higher Education Aspirants in Developed and Developing Countries

In developed countries, those aspiring to pursue higher education typically have easy access to digital resources, ranging from libraries of the highest calibre to laboratories and even AI-assisted learning platforms (Morgatroyd, 2024). Because North American and European universities have already adopted digital learning management tools (Wu, 2024), they are prepared for hybrid and fully online courses. Such environments enable class discussion, automated assessment, and even conversational agents that can tutor students, leading to more efficient and engaging learners (Wu, 2024).

On the other hand, developing countries are confronted with numerous obstacles, such as a lack of funds, poor ICT policies, and insufficient teacher training in digital pedagogy (Okoye eta l., 2023). As institutions in developed countries actively promote digital literacy and technology skills, the students from underprivileged areas with outdated educational environments and no institutional support struggle with knowledge. Studies show that students in the United States, the United Kingdom and Australia have made good use of digital solutions in academics, while students from South Asia and Africa face limitations in Digital Adoption because of socio-economic status (Charan et al., 2024).

Common Digital Communication Tools and How They Are Used in the Real World

Digital communication tools are central to EFL higher education aspirants' learning process. The rise of technology-enhanced language learning (TELL) solutions has allowed students to build language skills with dynamic, immersive, and personalised learning environments (Qizi, 2025). Digital tools allow for instant communication, recorded lessons, native language support, and AI-enhanced performance feedback, which help learners become more successful in mastering language (Xu, 2024).

For Example, for the EFL students enrolled in higher education, these tools answer such

challenges as insufficient exposure to native English speakers, absence of immediate feedback, and limitation of classroom interaction. They offer learners a flexible and accessible learning experience that can help fill gaps in traditional language instruction, encouraging self-paced and independent learning (Ebbini, 2023).

Tools of Video Conferencing for EFL Learning

Zoom

Zoom has become a central medium for EFL learning, allowing students to participate in live language practice, group discussions, and interactive lectures (Hashtomo & Marcela-Lentera, 2-21). Its breakout rooms are a great way for students to engage in peer discussions and role-play, both essential for spoken fluency and building confidence (Dmitrenko et al., 2024).

Microsoft Teams

Microsoft Teams combines text, audio, and video communication systems that allow EFL students to learn within structured environments. This means that teachers can assign tasks, give feedback and have group discussions, encouraging collaborative language learning (Albaaly, 2023).

Google Meet

Tran et al. (2024) mentioned that Google Meet provides live captioning and automatic transcription, which are beneficial for listening skills and pronunciation practice in EFL education.

Cisco Webex

Cisco Webex brings AI-powered meeting assistants, synchronous transcriptions, and separate whiteboards to academics and language practice (Qasimi, 2024).

Skype

Skype is still useful for one-on-one language tutoring, conversation exchanges while traveling internationally, and for real-time speaking practice with native speakers (Alakova, 2023).

Instant Messaging and Discussion Platforms

These tools enable text-based interaction, which can give EFL students informal practice with writing, grammar correction, and vocabulary building.

WhatsApp

EFL Students use it for peer discussions, quick Q&A, and academic materials sharing. The voice message feature assists pronunciation practice (Kartal,2024)

Telegram

Provides cloud storage, extensive file sharing, and voice chat rooms, which help collect data for group discussions and when learning a language collaboratively (Thomas & Bhat, 2022).

Discord

It promotes EFL study communities that offer text-based discussion, voice communication, and collaborative generation of pieces in real time (Sufi et al., 2024).

Slack

Slack is a prototype for academics, peer collaboration & structured writing practice (Muller, 2023).

Facebook Groups

These are commonly used by EFL students who share resources, discuss threads and get language learning tips (Mai et al., 2020).

Tools for File Sharing and Collaborative Workspaces

These platforms allow EFL students to collaboratively compose, edit, and evaluate academic content.

Google Docs

These allow simultaneous writing collaboration in real time enhanced by teacher feedback and peer editing, which improves grammar and academic writing (Hoang & Hoang, 2024).

Microsoft OneDrive

It offers secure cloud storage and file-sharing features, essential for saving research papers and assignments (Muchmore, 2020).

Dropbox

It provides students with a database of EFL learning materials, video lessons, and e-books (Andrea & Andrea, 2023).

Notion

These are used for note-taking, organising research, and writing vocabulary lists (Thomas & Thomas, 2021).

Tools of Interactive Discussions

Moodle

A popular LMS includes discussion boards, multiple choice quizzes and interactive language activities to create greater engagement and allow for autonomous learning (Gudkova et al., 2021).

Blackboard

These deliver the structure of course materials, self-assessment tools, and instructor feedback constituting EFL academic writing and understanding (Almutairi & Elsawy, 2023).

Canvas

It is well suited for studying independently with its mobile-friendly design and personalised learning paths (Rossiter et al., 2024).

Google Classroom

It is seamless connectivity with Google Meet and Docs for instant assignment submissions and teacher-student interaction (Ngozi, et al., 2024).

Tools for Grammar Corrections, Communication and other Corrections

Grammar corrections, pronunciation practice, and definition suggestions are some of the things these tools provide.

Grammarly

A writing assistant using AI to correct grammar, enhance sentence structures, and offer vocabulary recommendations is crucial for academic writing in English (Fitria-Metathesis, 2021).

Duolingo

It is native or addictively fun features based on classic video games, allowing for improved vocabulary, sentence structure and pronunciation (Gracia, 2024)

Rosetta Stone

This tool is based on speech recognition technology, it aims to assist EFL learners with pronunciation and fluency (Dando et al., 2024).

Babbel

The show focuses on conversational English, which can also be valuable for everyday communications kills.

Kahoot

Kahoot is the word games and grammar practice quizzes game-based platform

Tools for Research and Citation Management

They facilitate academic research and develop citations and referencing, which are essential for writing English research papers for EFL students.

Mendeley

Mendeley is a reference management tool that helps EFL students organise citations and

build bibliographies

Zotero

Zotero helps students in collecting, organising, and citing research resources, promoting academic honesty.

EndNote

EndNote is a premium tool for citation and reference list management, as well as research collaboration

The Role of Digital Communication Tools for Higher Education EFL Candidates

Video conferencing tools enable virtual practice of the language in English with teachers and peers (Maher, 2020). Tools featuring AI-based speech-to-text transcription (e.g. Google Meet) support listening comprehension. Tools for correcting grammar (Grammarly, Google Docs) assist in error-free writing. Mendeley or Zotero, are annotation and citation management tools for research paper. Gamified platforms (Duolingo, Kahoot) thereby making learning English as a fun.

The internet, discussion forums, and chat groups are promising for developing interactive learning environments (Bender, 2023). Users can find native speakers on Skype, Discord, etc. The advent of cloud file storage and LMS platforms has made learning possible anytime and anywhere. But digital tools accommodate various learning styles conducive to individualised education.

Challenges of Using Digital Tools by Students Aspiring to Higher Education

While these digital tools have many advantages, students face many challenges that can restrict their use. Digital literacy continues to serve as an obstacle to online education, especially among students studying non-technical fields who can become overwhelmed by online learning environments with higher levels of technology (Tuchid, et al., 2024). This also means that most students lack the skills to use this digital ecosystem effectively, so they need training programs to make the most of education through digital tools.

In developing countries, imperative issues persist related to internet connection and affordability. Many students cannot study online due to less secure networks and expensive internet costs (Zarei & Mohammadi, 2022). Poor access to high-speed internet hampers participation in virtual classrooms and adversely impacts education quality. Additionally, digital inequality contributes to gaps in academic performance, as students from disadvantaged backgrounds do not have as much access to advanced technological resources

compared to students with a more prosperous background (Cruz et al., 2021).

With this increased reliance on digital tools, cybersecurity and data privacy concerns have also increased. As higher education institutions rely heavily on online e-learning platforms for academic activities, the risk of data breaches, identity theft, and unauthorised access to personal information increases (Sadiqzade & Alisoy, 2025). Students and teachers have relatively little knowledge of cybersecurity best practices, leaving them targeted for phishing attacks and online fraud.

Moreover, digital fatigue emerges from prolonged screen time and overdependence on digital platforms, hampering students' concentration, mental state, and academic performance (Sandua, 2024). Strategic interventions, including digital literacy initiatives (for educators, children, and parents), health care and infrastructure improvements, cybersecurity policies, and child-centred pedagogical adaptations, are needed to address these challenges and create a balanced and effective learning environment.

Related Studies

TELL in higher education, argue that the integration of technology into face-to-face or blended learning environments promotes the use of tools for digital communication (Islam & Sarker, 2022). Their research emphasises the role of platforms in generating interactive learning environments for EFL learners and personalised learning experiences for students through real-time interaction between a student and teacher via Zoom, Google Meet and other AI chatbots. According to the authors, digital tools help improve pronunciation, word retention, and listening by providing immediate interactivity. They also explore how adaptive learning algorithms can be used to tailor the difficulty of existing content and activities to the learning pace of each student. The broad conclusion is "We think the combination of smart language assistants and collaborative digital spaces creates an engaging and effective EFL learning environment".

Digital platforms such as Duolingo, Grammarly, and Kahoot! have been explored by Ahmad et al., (2022), regarding their potential as effective avenues for instruction in improving EFL learning. Their study indicates that gamified environments have a profound positive impact on student motivation and engagement. For example, the adaptive exercises offered by Duolingo give personalised lessons in grammar and vocabulary, while the AI-based corrections provided by Grammarly help students improve their writing skills. According to the study, interactive quizzes and discussion boards are also shown to promote

peer learning. Although Hockly acknowledges that these devices are ubiquitous, she cautions that technical Wichita and issues related to digital literacy prevent these tools from being fully realised, especially in developing areas that may not have access to such technology.

Michaelsen (2020) explored that digital tools are for promoting self-directed learning among EFL students. Google Docs, OneNote, and Evernote act are devices where students can take control of their language learning process using joint writing and knowledge sharing. Cloud-based tools help improve the accessibility of the learning course materials, and the students can always access the content anytime and go back and repeat. Additionally, the results of the study indicated that WhatsApp and Telegram study groups foster a supportive learning environment per study group, where students can continue informal language practice outside the language classroom. Technology enhances and empowers EFL learners by providing flexible and interactive student-centered education (Pastini & Lilasari, 2023).

Silvhiany, Huzaifah and Imet (2021) studied the opposing issue of digital literacy in higher education, particularly among EFL scholars. Their study shows that many learners struggle to use complex digital platforms because they have never used technology to learn before. Although tools such as Moodle, Blackboard, and Edmodo provide excellent learning opportunities, the effectiveness of their use depends on students being able to navigate the interfaces and use their features efficiently. To ensure that EFL students can gain most of the benefits of these tools, the research adds that digital literacy should be taught as a part of EFL curricula. Adding that students of lesser privileged backgrounds have barriers to digital adoption, including poor access to the internet and old hardware.

Thatphaiboon & Sappapan (2022) analysed the effect of video-conferencing platforms on EFL students' speaking and listening skills. Their study shows that tools such as Zoom, Microsoft Teams, and Google Meet offer opportunities for real-world communication with native speakers and peers, leading to improved pronunciation and fluency. According to the researchers, breakout rooms using Zoom enable students to participate in peer conversations and role-playing activities, simulating communication situations that occur in the world. Also, live captions and automated transcription features available in Google Meet assist students who struggle with listening comprehension. The teachers point to video conferencing as a bridge between what is taught in the classroom and how the language can be utilised in the real world, thus making it a key component of EFL education.

Vigiatzis (2022) linked the prevalence of social media platforms to language learning in EFL

higher education. Their study reveals that platforms like Facebook, WhatsApp, and Telegram are informal learning spaces where students discuss ideas, share learning resources, and practice conversational skills. Facebook groups for language learning into the mix, which let students converse with readers and teachers around the planet," the authors note. On the other hand, WhatsApp voice messages and Telegram channels can be used for pronunciation practice and vocabulary expansion. But the study also cautions that informal learning via social media is less structured, with students left vulnerable to misinformation, distractions and less focused values.

Seraj, Habil and Hasan (2020) also discussed usability issues concerning digital communication tools for EFL learning contexts. The study demonstrates that many Learning Management Systems (LMS) and videoconferencing software have elaborate interfaces that could prove challenging for students with little technical knowledge. They also emphasized worries about cybersecurity risks, including the possibility of data leaks and unauthorised access to student data. The findings highlight the demand for more user-friendly platforms with easy navigation and multilingual support, assisting a diverse student population.

James (2021) explored the digital gap between students of advanced and developing nations. Their study found that students in high-income countries have the advantage of an advanced technological infrastructure. At the same time, those in low-income regions struggle to access digital learning tools. The study argues that without equitable access to digital resources, educational outcomes are not at a level when students from less-privileged backgrounds find it tedious to contribute to online discussions with classmates, access the digital library, and submit homework. The research calls on governments and institutions to help bridge the digital divide through subsidised internet services or affordable digital devices. Bustamante (2023) discussed cybersecurity concerns in the context of digital education for EFL students. Their study indicates that data privacy risks and cybersecurity threats remain unknown to many students using online discussion forums, LMS platforms, and cloud-based storage. The authors say institutions should implement better cybersecurity practices like two-factor authentication, encrypted communication and a data protection policy. They also say cybersecurity awareness training should be incorporated into digital literacy programs so that students can protect their personal and academic information.

Research Methodology

To achieve the objective of this study, a quantitative method is used to gather comprehensive

data on the usage patterns, perceptions, and effectiveness of digital communication tools among higher education aspirants. Data is collected through a survey-based questionnaire from higher education aspirants of English Majors. The survey includes closed-ended questions to provide quantitative data on tool usage frequency and percentage, to provide data on students' perceptions and practices regarding digital communication tools. The questionnaire consists of demographic information, app usage, usability, and perception aspects.

The quantitative data is examined using descriptive statistics (frequency distributions and percentages) to establish usage trends among the respondents. Using tool of SPSS version 25 for statistical analysis, using the data demographics (e.g., age, gender, academic discipline) and using patterns with digital communication tools are calculated.

Data collection is for a fixed time frame during the above period. The sample is comprised of 132 higher education aspirants to generate a reasonable volume of data for analysis. The sampling method is convenient sampling and the data is collected through Google Forms by sending the questionnaire through email, WhatsApp and The study is fully respect ethical considerations such as consent and confidentiality. This study presents recommendations to educators and policymakers on how to improve the integration of relevant digital communication tools in educational practices, promoting learning and broader collaboration among higher education aspirants.

Theoretical Framework

The present study stands on the shoulders of two giants- the Technology Acceptance Model (TAM) and the Theory of Digital Adoption. According to TAM, users accept and incorporate glucose technology mainly based on a forward-looking perspective on whether or not it can be used effectively (Zaineldeen et al., 2020). For any technology to thrive, it must be perceived as useful and effortless to use. A deliberate study of digital communication tool adoption among Pakistani aspirants to higher education in English-major disciplines, TAM provides a framework for understanding why certain tools, such as WhatsApp and Zoom, are publicly funded facilitators of academic collaboration in addition to being widely accepted for their utility (Alfadda & Mahdi, 2021).

Data Analysis

The survey data is processed using SPSS version 25 and converted into tables and graphs. Microsoft Excel is also employed to design the graphs and tables. This section offers a

detailed analysis of the results obtained from the processed data.

Demographic Information

Gender	**Frequency**	**Percent**	**Employment Status**	**Frequency**	**Percent**
Male	90	68.2	Employed	82	62.1
Female	42	31.8	Unemployed	50	37.9
Total	132	100	Total	132	100
Status	Frequency	Percent	**Publication Status**	Frequency	Percent
Teacher	66	50.00	No Publication	94	71.2
Student	48	36.40	1 to 5 Publications	20	15.2
Other	18	13.60	5 to 10 Publications	8	6.1
Total	132	100	More than 10 Publications	10	7.6
			Total	132	100

The sample includes 132 individuals, of which 68.2% are male (90 individuals) and 31.8% are female (42 individuals). In terms of employment status, 62.1% (82 participants) reported they were employed, while 37.9% (50 participants) reported that they were unemployed. Most respondents were used, indicating a working-class demographic and a higher male representation. Such demographical information is essential to highlight, given the diversity of experiences and perspectives of respondents in the context of digital communication tools of higher education.

Question No. 1: Status of Apps Usage

App Name	**Frequency**	**Percent**
WhatsApp	40 + 30 + 30 + 6 + 2 = **108**	**80.30%**
Facebook	30 + 30 + 4 + 2 = **66**	**48.50%**
Instagram	2 + 30 + 30 + 2 = **64**	**47.50%**
Twitter	2 + 2 = **4**	**3%**
Others	4 + 2 = **6**	**4.50%**

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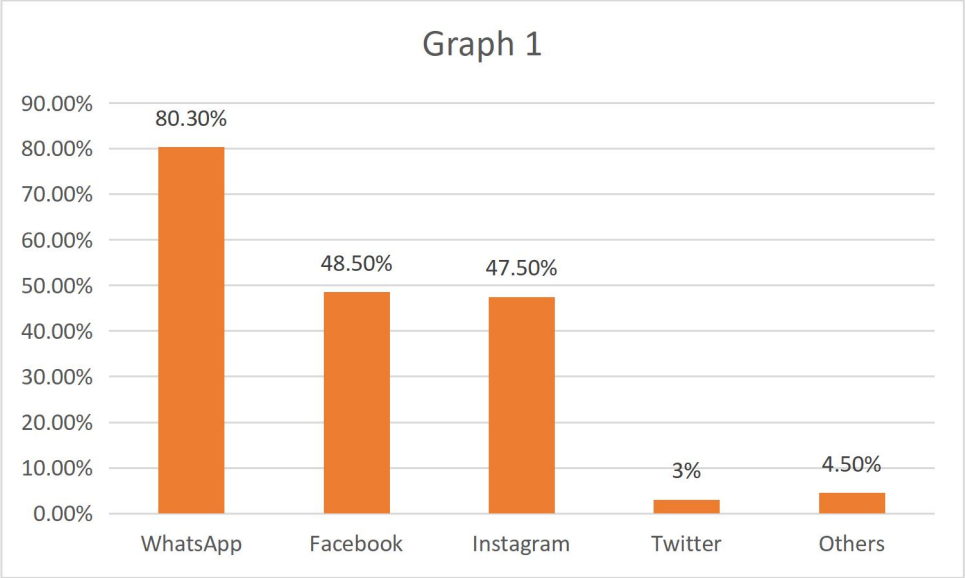

Analysis

App usage analysis indicates that the most popular app is WhatsApp, with a regular use of 80.3% (108 participants). Facebook is the most used by 48.5% (66 participants), and very closely, Instagram is the second most used (47.5%: 64 participants). Very low usage of 3% (4 participants) on Twitter, it seems that communication through microblogging platforms are not signatures to these participants. Other Apps: 4.5% (6 participants), indicating little engagement with the less popular platforms. Based on these numbers, WhatsApp, Facebook, and Instagram occupy higher education aspirants' top echelons of digital communication; more specialised platforms such as Twitter seem to have little importance.

2. Do you use language learning apps?

Responses	Always	Often	Sometimes	Rarely	Never	Total
Frequency	26	32	40	16	18	132
Percentage	19.70%	24.24%	30.30%	12.12%	13.64%	100%

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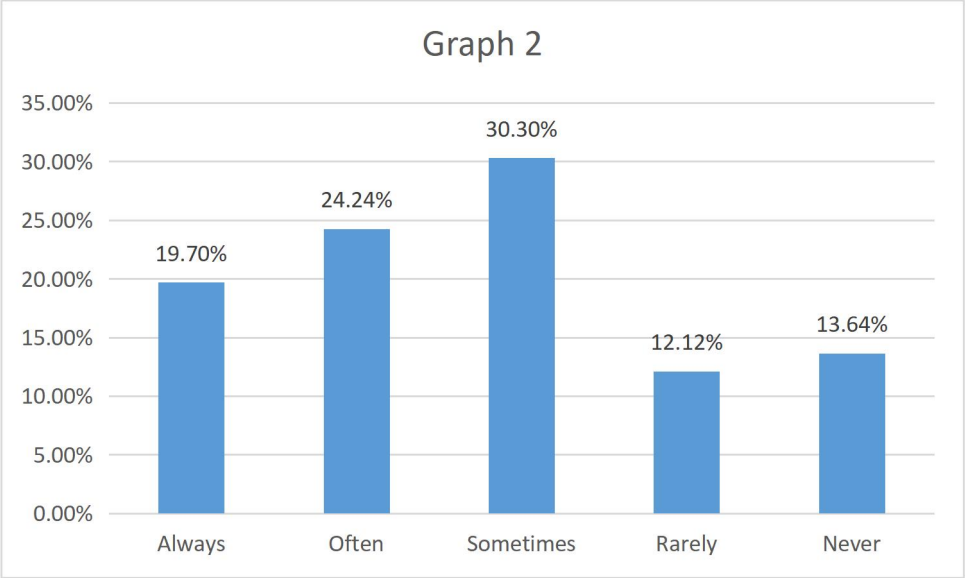
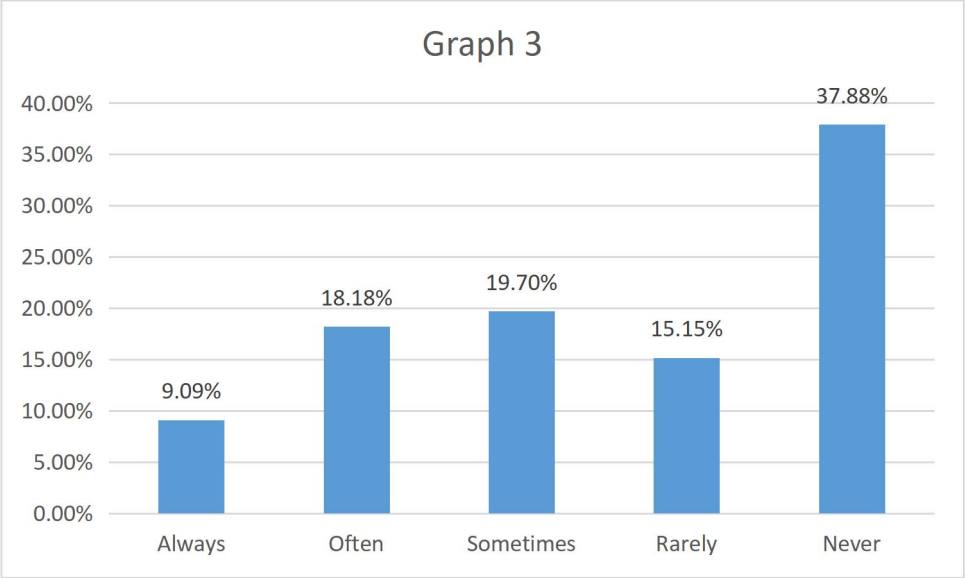


Analysis

For language learning apps, 19.7% (26 participants) always use these, and 24.24% (32 participants) use them frequently. A sizable proportion of 40 (30.3%) use orthosis sometimes, indicating a moderate level of use. 12.12% (16 participants) use it rarely, and 13.64% (18 participants) never use it. That is, language learners are somewhat less likely to mention language apps as something they use regularly, going by the frequency of use of language learning apps. While they are appreciated, they are not yet critical for average users.

3. Do you use microblogging sites (i.e. X, Twitter) for language learning, like listening to native speakers (English, etc.)?

Responses	Always	Often	Sometimes	Rarely	Never	Total
Frequency	12	24	26	20	50	132
Percentage	9.09%	18.18%	19.70%	15.15%	37.88%	100%



Analysis

Microblogging platforms such as Twitter facilitate limited use in language learning. Only 9.09% (12 participants) use them constantly, while 18.18% (24) use them often. An additional 19.7% (26 participants) indicated that they sometimes use these platforms for language learning. 37.88% (50 participants) never use microblogging sites like Twitter. This suggests that while some people use Twitter for language learning, most do not find it a particularly effective means to an end. The high percentage of people who never use this resource implies that, with regard to language acquisition, participants may prefer to use other resources, such as applications or platforms specifically aimed at language learning.

4. Do you use Zoom or Google Meet-like platforms for real-time interaction during Webinars, Conferences, or for other purposes?

Responses	Always	Often	Sometimes	Rarely	Never	Total
Frequency	32	42	30	14	14	132
Percentage	24.24%	31.82%	22.73%	10.61%	10.61%	100%

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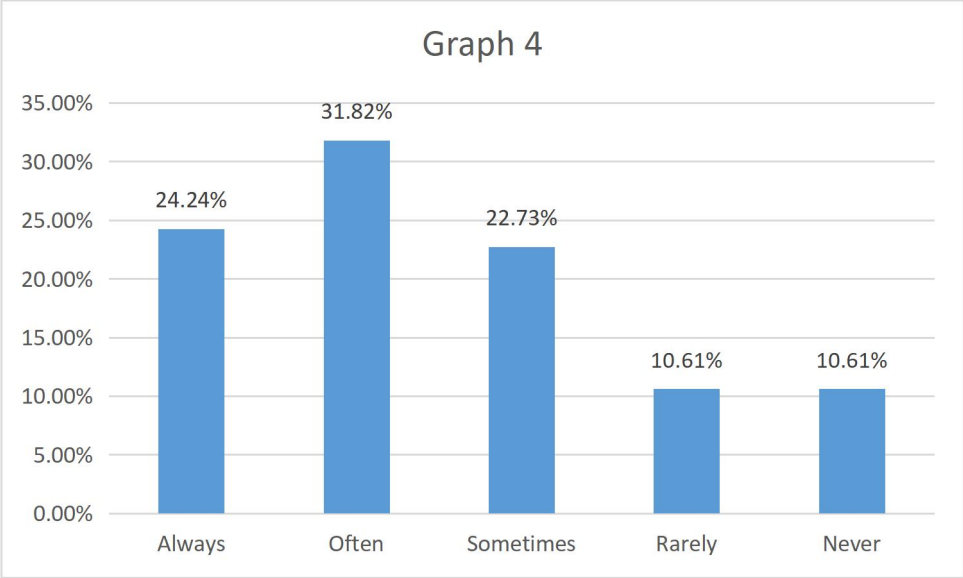

Analysis

For the real-time interaction platforms like Zoom and Google Meet, 24.24% (32 participants) use them constantly, and 31.82% (42 participants) use them often. That shows that it is relatively normal to use live video. Also, 22.73% (30 participants) use these platforms on an occasional basis, 10.61% (14 participants) rarely use them, and another 10.61% (14 participants) never use them. Given the increased reliance on these video streaming platforms for webinars, conferences, and other academic exchanges, they allow for high usage. In contrast, the 21.22% (28 participants) who rarely or never use these platforms might be limited by personal issues and access to such means of communication or by alternative means of communication.

5. Do You Play Educational Games Like Minecraft Adventures In English?

Responses	**Always**	**Often**	**Sometimes**	**Rarely**	**Never**	**Total**
Frequency	14	8	22	18	70	132
Percentage	10.61%	6.06%	16.67%	13.64%	53.03%	100%

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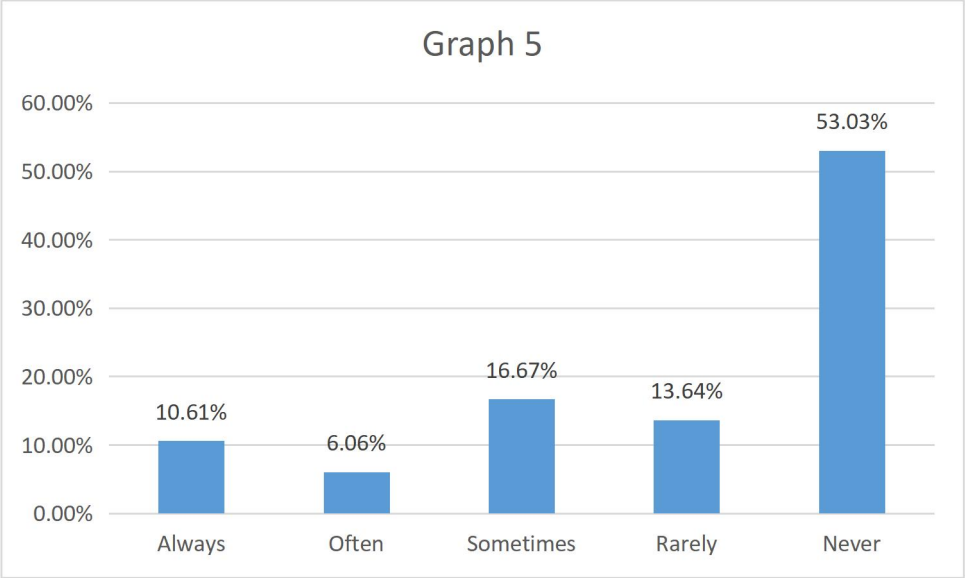

Analysis

In events like Minecraft Adventures in English, we see a decent gap in engagement when educational games are used. Only 10.61%(14 participants) use it constantly, and 6.06% (8 participants) use it often. Nonetheless, 16.67% (22 cases) use it sometimes, and 13.64% (18 cases) use it rarely. The vast majority, 53.03% (70 participants), do not play educational games. This indicates that while some respondents struggle to learn more through educational games, the response is a surprising don't view these as crucial tools in their arsenal, perhaps favouring lessons over gamified experiences.

6. Do You Use Digital Quiz Tools Like Kahoot?

Responses	**Always**	**Often**	**Sometimes**	**Rarely**	**Never**	**Total**
Frequency	12	14	22	30	54	132
Percentage	9.09%	10.61%	16.67%	22.73%	40.91%	100%

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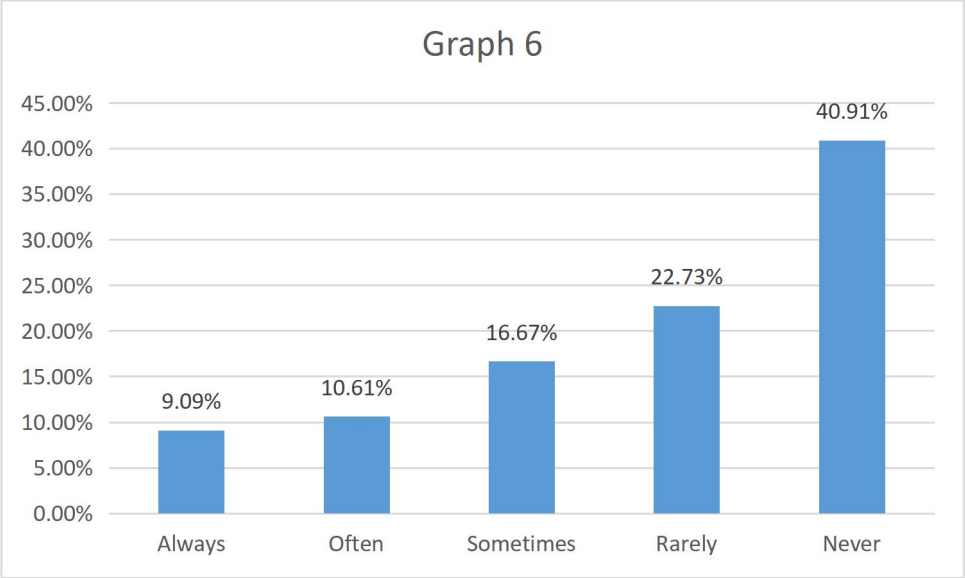

Analysis

In connection with digital quiz tools such as Kahoot, Digital quiz tools (digital quiz applications such as Kahoot) are used always by 9.09% (12 participants) and often by 10.61% (14 participants). Another 16.67% (22 participants) reported sometimes using these tools. In contrast, 22.73% of participants (30) indicated that they rarely use them, and 40.91% (54) reported that they never use them. There is a high percentage of users (63.64%). However, the tools are not being used as frequently.

7. Higher Education Aspirants Should also use Social Media Apps

Responses	**Strongly Agree**	**Agree**	**Undefined**	**Disagree**	**Strongly Disagree**	**Total**
Frequency	58	54	14	6	0	132
Percentage	43.94%	40.91%	10.61%	4.55%	0.00%	100%
Mean				**4.24**		

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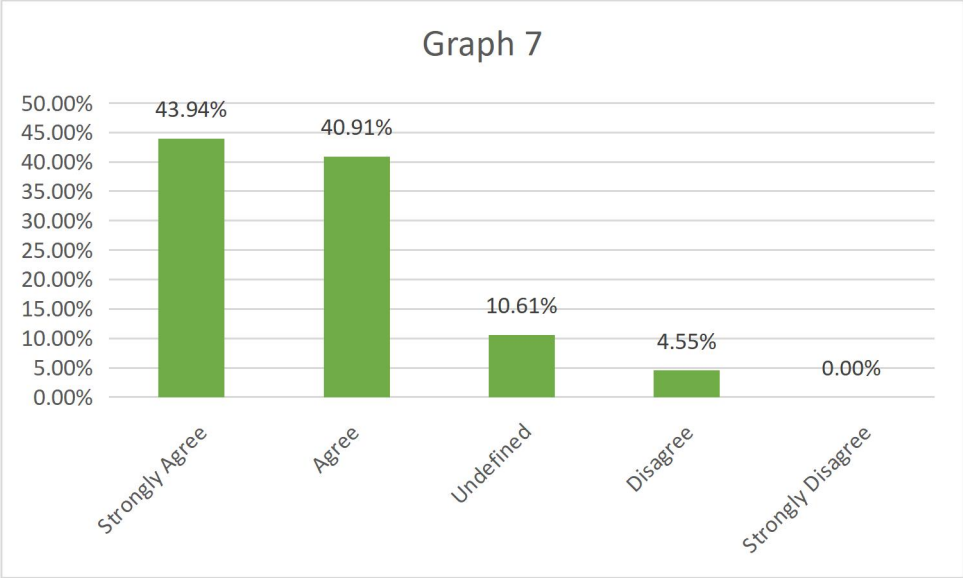
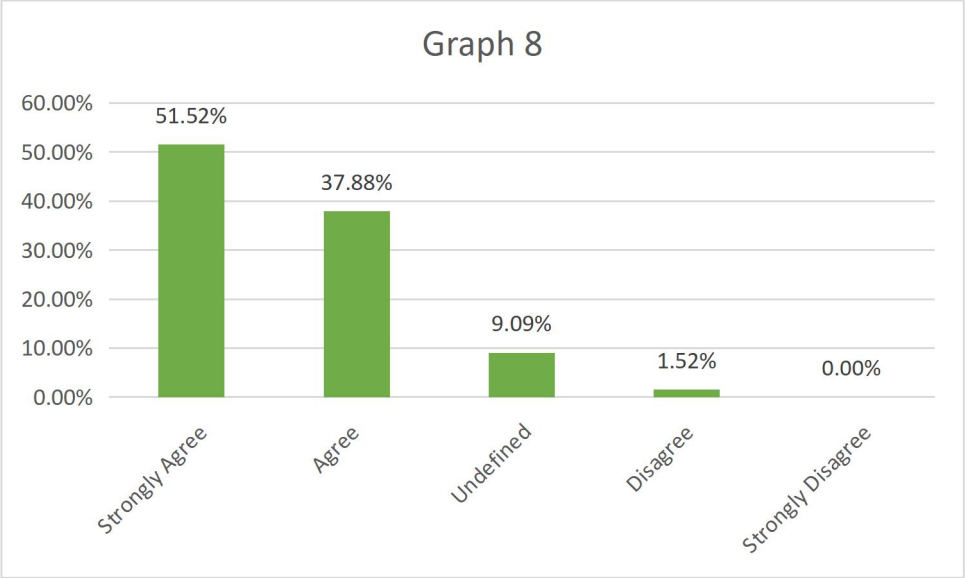


Analysis

43.94% (58 participants) strongly agree, and 40.91% (54 participants) agree when asked whether higher educational aspirants should use social media apps, which indicates a positive attitude towards social media being a helpful tool for education. A small proportion, 10.61% (14 respondents), were neutral, and 4.55% (6 respondents) did not agree. This data indicates a strong commitment to the role of social media in deepening learning experiences, particularly networking, learning, and collaboration, in the digital world.

8. Higher Education Aspirants Should Join Groups and Spaces for Real-World Interaction on Digital Spheres.

Responses	**Strongly Agree**	**Agree**	**Undefined**	**Disagree**	**Strongly Disagree**	**Total**
Frequency	68	50	12	2	0	132
Percentage	51.52%	37.88%	9.09%	1.52%	0.00%	100%
Mean				**4.39**		



Analysis

Most of those responding to whether higher education aspirants should join groups or spaces for real-world interaction on digital platforms said yes, 51.52% (68 participants) strongly agree and 37.88% (50 participants) agree. Only 12 (9.09%) participants (undecided) and 2 (1.52%) participants (disagree). This would seem to indicate a preference from the respondents for collaboration and digital networking, with social media providing valuable opportunities for interaction and knowledge sharing.

9. Higher Education Aspirants Should Join Collaborative Learning Platforms On Social Media.

Responses	**Strongly Agree**	**Agree**	**Undefined**	**Disagree**	**Strongly Disagree**	**Total**
Frequency	54	68	8	2	0	132
Percentage	40.91%	51.52%	6.06%	1.52%	0.00%	100%
Mean				**4.32**		

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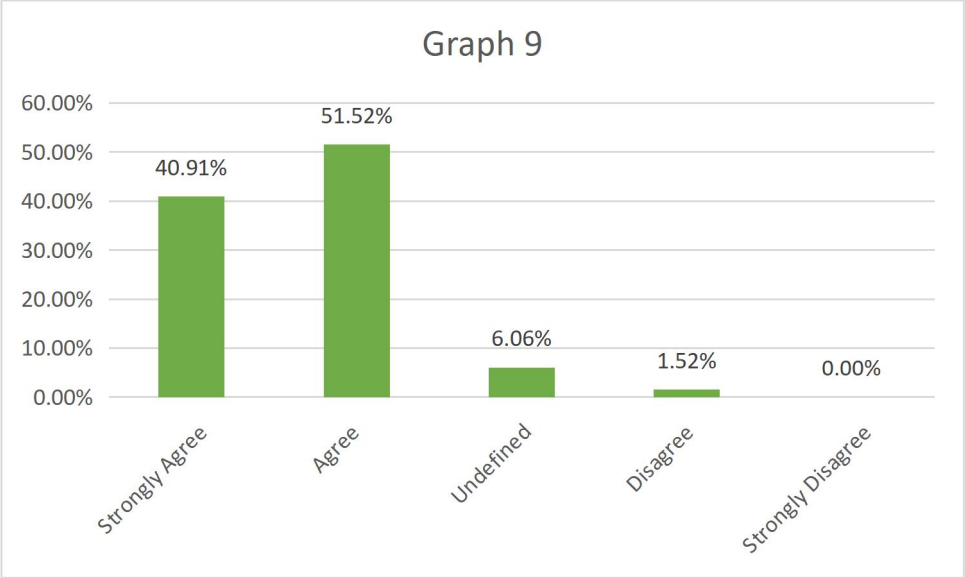

Analysis

The table analysis strongly supports collaborative learning platforms on social media among higher education aspirants. 92.43% agreed that "these social networks can facilitate academic collaboration between countries," with 40.91% strongly agreeing and 51.52% agreeing. 1.52% disagreed, and no one strongly disagreed, indicating that opposition to such platforms is virtually absent. On the other hand, 6.06% were uncertain, which might have been due to the lack of experience or the impact of social media as a learning tool. The mean value of 4.32 indicates a broadly positive perception, with most responses grouped around agreement. These data suggest that social media-based collaborative learning has received positive focus as an effective tool for knowledge sharing, academic discussion, and peer support. Anecdotal evidence points to minimal disagreement, highlighting its increasing significance in education.

10. I Think Higher Education Aspirants Should use Apps that Help them Connect with Native Speakers (e.g., of the English Language)

Responses	**Strongly Agree**	**Agree**	**Undefined**	**Disagree**	**Strongly Disagree**	**Total**
Frequency	70	50	10	2	0	132
Percentage	53.03%	37.88%	7.58%	1.52%	0.00%	100%
Mean				**4.42**		

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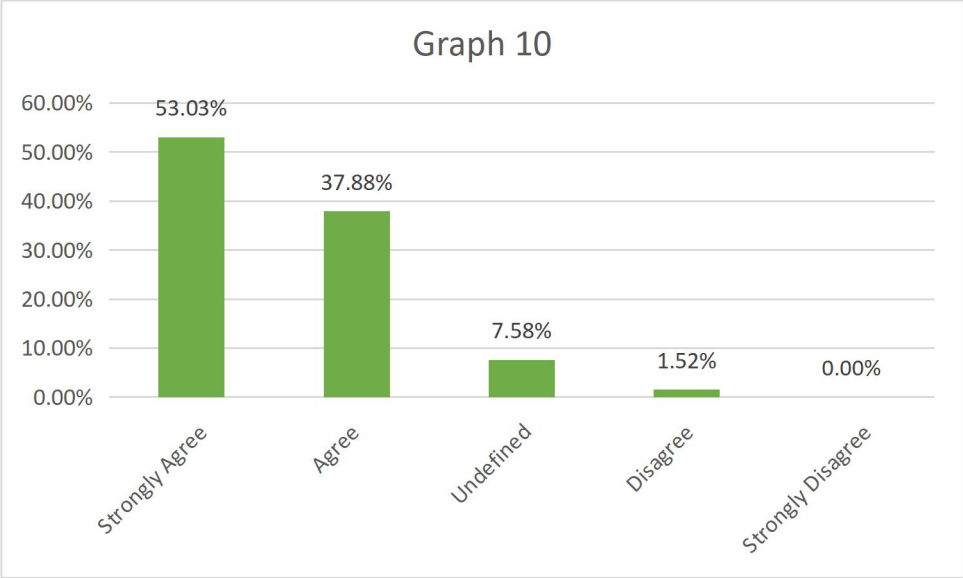

Analysis

As to whether aspirants of higher education should have apps through which they connect with native speakers of languages such as English, 53.03% (70 participants) strongly agreed, and 37.88% (50 participants) agreed. 7.58% (10 participants) were undecided, while 1.52% (2 participants)disagreed. This is a consensus that native speaking implies proficient language skills and is a widely accepted way of language learning.

11. Higher Education Aspirants should Participate in Language-Related Discussions and use Hashtags to Find Relevant Topics.

Responses	**Strongly Agree**	**Agree**	**Undefined**	**Disagree**	**Strongly Disagree**	**Total**
Frequency	60	54	16	2	0	132
Percentage	45.45%	40.91%	12.12%	1.52%	0.00%	100%
Mean				**4.30**		

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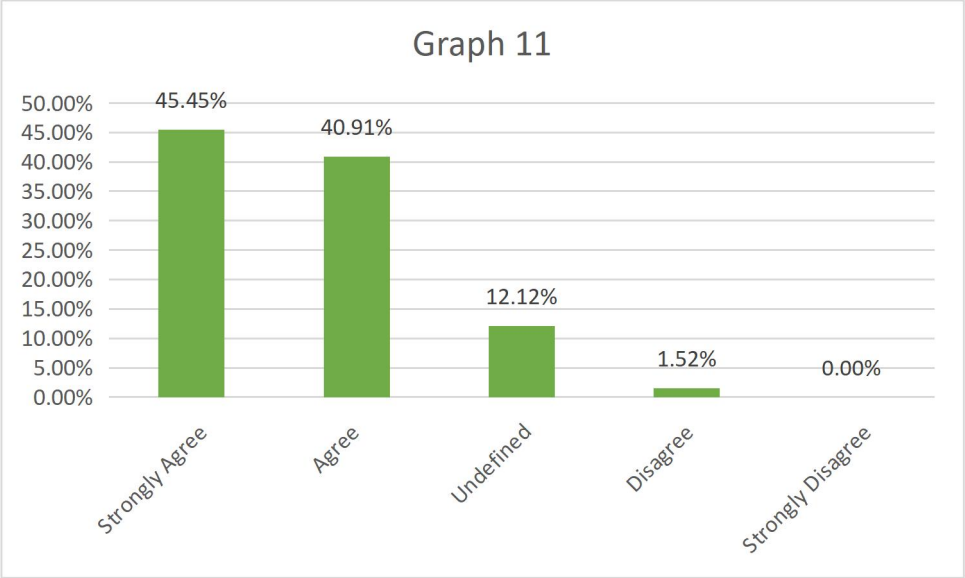

Analysis

The result here shows that 45.45% (60 participants) strongly agree and 40.91% (54 participants) agree regarding participation in the language-related discussion and using hashtags to search for the relevant topic. The majority said yes (85.34%, 113 participants). In comparison, a small percentage were undecided (12.12%, 16 participants), and 1.52% (2 participants) disagreed. The participants feel strongly that organising tweets around language discussions and hashtags contributes to their learning. This resonates with the widely overwhelming majority who would like to use these to research and engage in related studies online, showcasing the importance of digital communication for speech.

12. I Think Higher Education Aspirants should attend Language-Related Webinars, Conferences and Seminars.

Responses	**Strongly Agree**	**Agree**	**Undefined**	**Disagree**	**Strongly Disagree**	**Total**
Frequency	68	44	14	6	0	132
Percentage	51.52%	33.33%	10.61%	4.55%	0.00%	100%
Mean				**4.32**		

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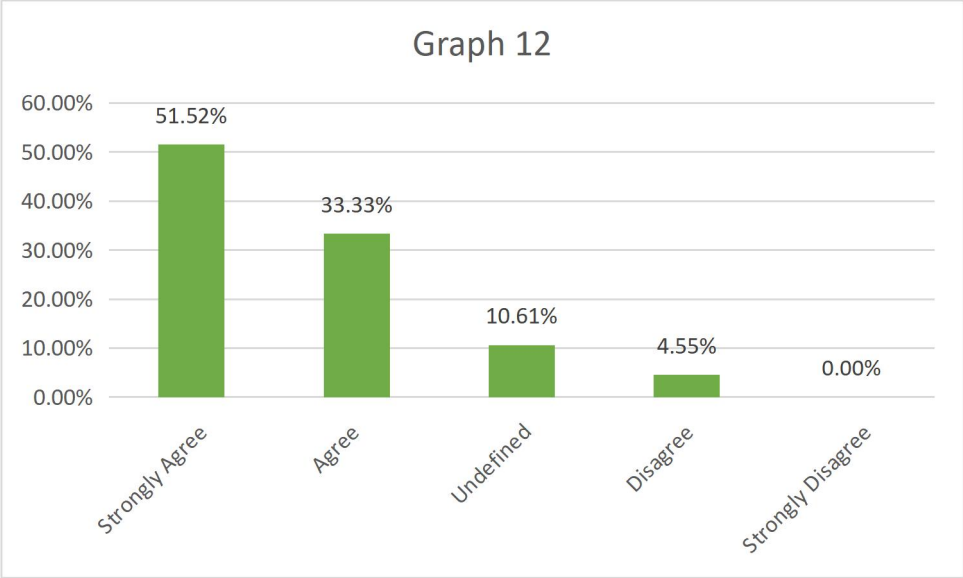

Analysis

51.52% (68 participants), and 33.33% (44 participants), there were eight people about the participation of higher education aspirants in webinars, conferences and seminars related to the language, which is 6.06% strongly disagree. In comparison, 42 people (3.03%) were also indifferent toward attending webinars, conferences and seminars related to the language. 10.61% (14 participants) were unsure about their answer, whereas 4.55% (6) answered no. On the other hand, these findings show that online events are considered an integral component of the learning process by 70% of respondents. Webinars and seminars are helpful for knowledge, networking, and language, so the perception of educational events in virtual formats is positive.

13. Higher Education Aspirants should Participate in Answer Sessions for Better Communication Skills.

Responses	**Strongly Agree**	**Agree**	**Undefined**	**Disagree**	**Strongly Disagree**	**Total**
Frequency	70	54	6	2	0	132
Percentage	53.03%	40.91%	4.55%	1.52%	0.00%	100%
Mean				**4.45**		

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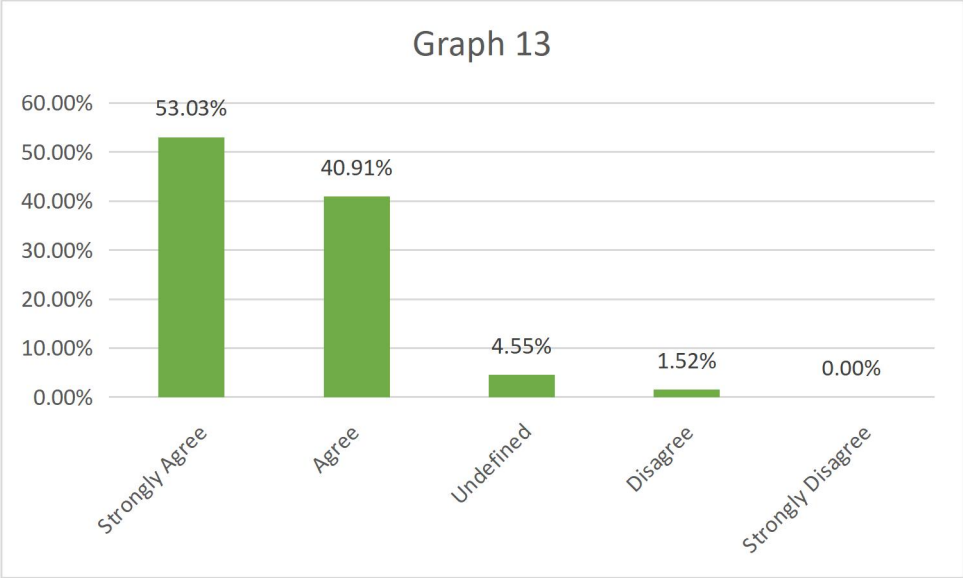

Analysis

Regarding the Q&A sessions to enhance communication skills, 53.03% (70 participants) strongly agreed, and 40.91% (54 participants) reported agreeing with the statement. 4.55% (6 out of 132 participants) were unclear with their responses, and 1.52% (2 out of 132 participants) did not agree. With most supporting Q&A sessions, participants strongly felt they significantly contributed toward practical communication skills. This aligns with the growing appeal of digital platforms for interactive and practical language practice, which empowers real-time learning experiences.

14. Higher Education Aspirants should be Able to Use and Play Fun Puzzle Games.

Responses	**Strongly Agree**	**Agree**	**Undefined**	**Disagree**	**Strongly Disagree**	**Total**
Frequency	42	54	22	14	0	132
Percentage	31.82%	40.91%	16.67%	10.61%	0.00%	100%
Mean				**3.94**		

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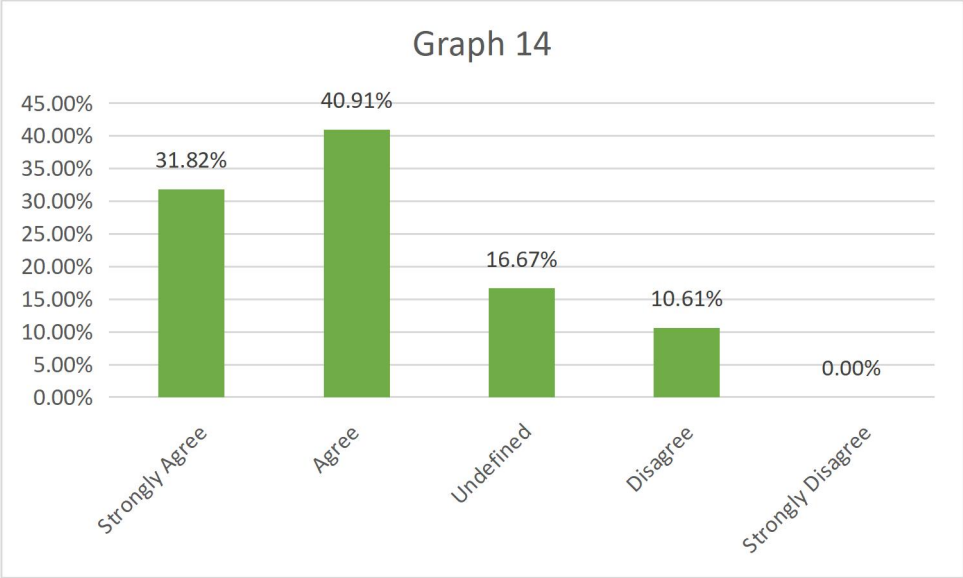

Analysis

When looking into language education, for example, the use of fun puzzle games for learning has shown mixed results. 31.82% (42 response) strongly agree, and 40.91% (54) agree. Twenty-two participants were undecided (16.67%), and 14 (10.61%) disagreed. A positive impression of gamified learning tools can be noted because around 73% consider using such games good; however, an opposite trend is observed in the percentage of people who prefer classic educational tools (sights). It indicates that, in general, educational games are valued, but they may not play a central role in the language learning of all users.

15. I Think Higher Education Aspirants Should be Able to Use Lesson-Planning Tools Like Kahoot.

Responses	**Strongly Agree**	**Agree**	**Undefined**	**Disagree**	**Strongly Disagree**	**Total**
Frequency	66	46	16	4	0	132
Percentage	50.00%	34.85%	12.12%	3.03%	0.00%	100%
Mean				**4.32**		

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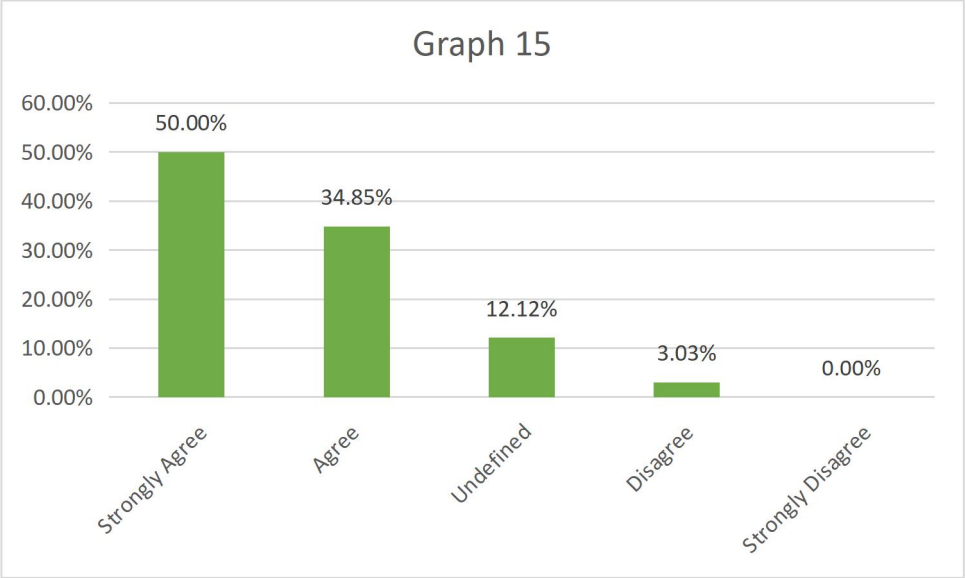

Analysis

These are factors in using lesson planning tools such as Kahoot, with 50.00% (66 participants) strongly agreeing and 34.85% (46 participants) agreeing. 12.12% (16 participants) were undecided, and 3.03% (4) disagreed. The data shows a resounding support for such tools being used in an educational setting, with a strong indication that many participants see a value in using an interactive learning platform such as Kahoot within lesson planning. This is a testament to the power of gamification and how interactive quizzes can promote the learning experience, particularly in the case of language learning.

Discussion

For Pakistani English Major aspirants in higher education, it is clear from the results of this study regarding usage patterns, perceptions, and effectiveness of digital communication tools that the Theory of Digital Adoption also holds. This theory argues that user receptiveness to a new technology and its integration depend on factors such as perceived ease of use, perceived usefulness, and external conditions such as accessibility and digital literacy (Davis, 1989). These results reflect a high degree of resistance to international social media. However, it is more of a three-way race regarding educational platforms (WeChat, QQ, and Line) and social media like Facebook, Twitter, and Microblogs. For these reasons, people more easily resort to using WhatsApp as a learning tool (80.3%). This supports earlier research indicating that WhatsApp is performance-oriented and encourages informal learning. Furthermore, the limitations placed on microblogging platforms such as Twitter (37.88% never use) indicate that English Major aspirants are inclined to adopt tools related to their immediate needs; this

aligns well with the theory of perceived usefulness driving adoption (Lee, 2022)). The use of language learning apps is only moderate: 19.7% always use them, and 30.3% use them only sometimes. Almaiah et al. (2022) notes that users exhibit selective adoption behavior, possibly due to different skill levels in handling digital media or limited penetration of these systems by higher institutions. However, though gamified platforms such as Duolingo encourage students to continue learning and may inject new life into m-learning practices, they can be expensive: Rehman & Iqbal (2024) quotes a Pakistani student who said, 'We really cannot afford to use Duolingo here yet." The Theory of Digital Adoption emphasizes that external barriers, such as a shaky Internet connection and lack of funding for hardware infrastructure, can hinder the implementation of these tools, especially in developing countries (Skafi et al., 2020). This is supported by the 21.22% of respondents who never or rarely use real-time interaction platforms like Zoom due to an inability to access them (perhaps because they are Broadband only) and/or lack of wired equipment, as well as other research studies. The high level of positive perception for social media in academic collaboration (agree or strongly agree: 84.85%) and for native-speaking practice with native speakers about English learning or any other non-mother tongue (agree or strongly agree: 90.91%) suggests that people today likely cannot help but take note. It helps them improve their language skills and meet people from all corners of the world. This aligns with Anderson and Albinsson (2024), who emphasize that social media can serve as an environment for peer-to-peer learning and access to diverse viewpoints. However, the theory suggests that adoption is limited by considerations such as misinformation and online burnout, as Bian et al. (2023) point out.

The study found that educational games are used very little: 53.03% of respondents never use them; even less frequently do they turn to quiz tools such as Kahoot!, with 40.91% saying they never use it. People have their own cultural and pedagogical preferences (Blume, 2020). In this study, the use of video-conferencing tools such as Zoom supports the assertion that they are essential for students to develop speaking and listening skills through real-time interaction.

In Pakistan, where digital training is in short supply, this contributes to the ongoing digital divide (Jamil, 2021). This aligns with previous studies such as Hoang and Hoang (2024), where work activities alongside individual assignments on collaborative platforms like Google Docs result in improved academic writing. However, Wan et al. (2024) argue that

these collaborative spaces can harbour data vulnerabilities that should not be overlooked, something teachers need to consider if these platforms continue to grow in popularity over the coming months. Following the Theory of Digital Adoption (Davis, 1989), this study specifically focuses on the views of Pakistani higher education aspirants toward digital communications platforms. With 84.85% responding agree or strongly agreeing regarding academic collaboration on social media platforms, this overwhelmingly positive view contrasts with their current reputation and aligns with those who believe these platforms promote networking and knowledge sharing. This is consistent with findings from Turkey; Issa et al. (2021) argue that social media can be utilized to share global perspectives through peer collaboration. Here, Oliver and Oliver (2022) also find that subscribers, with good reason, desire to engage in real-life discussions; it is viewed as an important application for these digital platforms in which interactive learning environments—demonstrated later in this work—are created.

With positive perceptions of integral tools, aspiring language enthusiasts envision fluency (90. 90.91%) through real- time interaction on video conferencing platforms, as proposed in Suciu, Stefanescu and Beceanu (2020).This perception embodies the theory' s emphasis on perceived usefulness, as people now view these instruments as aids for learning (Lazar et al., 2020). At the same time, reviewers also endorse webinars (93.94% agree or strongly agree) and fill-out questionnaires (93.94% agree) regarding their effectiveness in helping with communication skills and knowledge acquisition, consistent with the motivational theory of EFL activity formats. However, regarding gamified tools such as Kahoot and educational games, perceptions are less enthusiastic: only 72. 73% recognize their value for language learning, and 73% feel the same way. This indicates a selective perception, possibly due to limited familiarity or a preference for communication-oriented tools, as Al-Douri (2022) demonstrate in a study on digital literacy barriers. The Theory of Digital Adoption posits that perceived ease of use affects acceptance, and complex screen designs or lack of training may diminish enthusiasm for such tools (Tennakoon et al., 2023).

The views of current aspirants suggest that digital tools hold great potential for education, particularly those that facilitate authentic practice and collaboration. However, environmental pressures such as digital literacy and infrastructure issues, as Qazi, Sharif and Akhlaq (2024) highlight in communication strategies within Pakistan's context, hinder the widespread adoption of these tools or may lead to their discontinuation soon. The theory of

digital adoption is valid based on this study. Usefulness, accessibility, and perceived educational value contribute to the utilization of digital communication tools among Pakistani English major aspirants. Although tools like WhatsApp and Zoom are widely adopted for their ease of use and typical applications, barriers such as digital literacy, infrastructure, and selective engagement with gamified programs persist. Targeted interventions are necessary. Authorities and educators must prioritize digital literacy programs and infrastructure enhancements. Once the digital divide is bridged, providing fair access for all, the capacity of these tools to enhance language learning and foster global cooperation can be maximized (Memon and Memon, 2025).

Conclusion

This study examines the practices, perceptions, and usage of digital communication tools among future Pakistani higher education English majors in performing their duties. It highlights that these mediums are increasingly influential in improving language acquisition and academic cooperation. In accordance with the Theory of Digital Adoption, the survey data show that tools like WhatsApp (80. 3% of users utilize it daily) and Zoom are widely accepted because they are practical and simple to use. These tools provide convenience for peer interaction as well as an environment for real- time language practice (Davis, 1989). As evidenced by well- being posts on social media that promote global engagement, interaction with native speakers (90. 91% support) enhances language skills. However, the relatively small number of people using Kahoot or other gamified tools for language learning (40. 91% never use it) and language learning apps themselves (30. 3% sometimes use it) points to obstacles such as an uneven provision of digital learning resources in a rapidly developing Pakistan.

These findings suggest that although digital tools have great potential, their efficacy is limited by external factors such as slow internet and poor digital literacy. Concerns about cybersecurity and weariness with digital tools complicate the picture of user acceptance in the long term. To maximize the benefits of these tools, educators and policymakers must address gaps in digital literacy, and ICT must be improved. An enabling environment for digital resources will help narrow the digital divide. Suppose institutions can ensure that all students have an equal chance by providing them equal access to friendly information and communication tools. In that case, they will materially improve both the user experience for our English Major aspirants and overall achievement (as exemplified here). At the same time,

the current study may provide a basis for further research that identifies how to design a special planning stage for computer-directed learning based on a given district.

References

Adedoyin, O. B., & Soykan, E. (2023). Covid-19 pandemic and online learning: the challenges and opportunities. *Interactive learning environments*, 31(2), 863-875.

Ahmad, A., Mukhaiyar, A., & Atmazaki, A. (2022). Exploring Digital Tools for Teaching Essay Writing Course in Higher Education: Padlet, Kahoot, YouTube, Essaybot, Grammarly. *Int. J. Interact. Mob*. Technol., 16(13), 200-209.

Akther, F. (2022). English for personal and career development and its importance for better employment opportunities. *Journal of Languages, Linguistics and Literary Studies*, 2(3), 95-100.

Albaaly, E. (2023). Effectiveness of Microsoft Teams in Student Teachers' Achievement in an EFL Teaching Methods Course. *English Language Teaching*, 16(1), 1-1.

Albakova, M. (2023). "I'm here in the small village and, at the time, I'ma part of the whole world". The impact of using social networks and video conferencing service to support communicative English language teaching in Ingushetia, Russia. University of Gloucestershire,

Al-Douri, F. A. (2022). How Information and Communication Tools (ICT) affect the processes and decision-making in professional urban design practice*? URBAN DESIGN International*, 1-28.

Alfadda, H. A., & Mahdi, H. S. (2021). Measuring students' use of zoom application in language course based on the technology acceptance model (TAM). *Journal of psycholinguistic research,* 50(4), 883-900.

Aljawarneh, S. A. (2020). Reviewing and exploring innovative ubiquitous learning tools in higher education. *Journal of computing in higher education*, 32(1), 57-73.

Almaiah, M. A., Alhumaid, K., Aldhuhoori, A., Alnazzawi, N., Aburayya, A., Alfaisal, R., . . . Alkhdour, T. (2022). Factors affecting the adoption of digital information technologies in higher education: an empirical study. *Electronics*, 11(21), 3572.

Almutairi, H. M., & Elsawy, H. A. (2023). Assessment Tools of EFL Courses via Blackboard: Faculty Members' and Students' Perceptions. *Theory and Practice in Language Studies*, 13(12), 3319-3329.

AMINA, F. (2024). *Exploring EFL Students 'Perceptions on the use of Grammarly as an AI*

Writing Tool to Enhance Academic Writing Proficiency The Case Study of Master Two English Students. Mohammed Kheider University.

Andrea, P., & Andrea, P. (2023). Use of Electronic Resources in Teaching and Learning EFL in Higher Education.

Bender, T. (2023). *Discussion-based online teaching to enhance student learning: Theory, practice and assessment*. Taylor & Francis.

Bian, D., Xiao, Y., Song, K., Dong, M., Li, L., Millar, R., . . . Li, G. (2023). Determinants influencing the adoption of internet health care technology among Chinese health care professionals: extension of the value-based adoption model with burnout theory. *Journal of Medical Internet Research*, 25, e37671.

Blume, C. (2020). German teachers' digital habitus and their pandemic pedagogy. *Postdigital Science and Education*, 2(3), 879-905.

Bustamante Rabazo, M. I. (2022). How to educate in cyber security? a teaching-learning project in the English language.

Castillo García, M. A. (2024). Videogames and Speaking Skills.

Charan, A., Sant, R. K., & Dutt, A. (2024). TECHNOLOGY ADOPTION IN HIGHER EDUCATION AND CHALLENGES FOR SOUTH ASIAN STUDENTS IN DIGITAL LEARNING ENVIRONMENT. *Tec Empresarial,* 6(1).

Chen, Y., & Qin, X. (2024). Student fatigue and its impact on teaching effectiveness based on online teaching. *Education and Information Technologies*, 29(8), 10177-10200.

Coman, C., Mesesan-Schmitz, L., Tiru, L. G., Grosseck, G., & Bularca, M. C. (2021). Dear student, what should I write on my wall? A case study on academic uses of Facebook and Instagram during the pandemic. *PloS one*, 16(9), e0257729.

Cruz, C. (2021). From digital disparity to educational excellence: closing the opportunity and achievement gaps for low-income, Black and Latinx students. *Harv. Latinx L. Rev*., 24, 33.

Dahdal, S. (2020). Using the WhatsApp social media application for active learning. *Journal of Educational Technology Systems,* 49(2), 239-249.

Dandu, G., Charyulu, G., & KSNVL, L. (2024). AI-Driven Language Learning: The Impact of Rosetta Stone on ESL Students' Speaking Proficiency and Self-Control. *Rupkatha Journal*, 16(4), 2.

Dmitrenko, N., Budas, I., & Fedyk, T. (2024). Maximizing University Students' Spoken

Interaction in English within the Distance Learning Framework in Wartime. Analele Universitatii Ovidius Constanta, *Seria Filologie*, 35(1), 227-245.

Ebbini, E. (2023). Enhancing collaborative and self-paced learning in traditional and distance education settings. In *Higher education in the Arab world: E-learning and distance education* (pp. 223-245): Springer.

Fitria, T. N. (2021). Grammarly as AI-powered English writing assistant: Students' alternative for writing English. *Metathesis: Journal of English Language, Literature, and Teaching,* 5(1), 65-78.

Gudkova, Y., Reznikova, S., Samoletova, M., & Sytnikova, E. (2021). Effectiveness of Moodle in student's independent work. Paper presented at *the E3S Web of Conferences.*

Hastomo, T., & Marcela, E. D. (2021). Video conferences in teaching EFL: A case study of using Zoom. *Lentera: Jurnal Ilmiah Kependidikan*, 14(1), 125-132.

Helsper, E. (2021). The digital disconnect: The social causes and consequences of digital inequalities.

Hoang, D. T. N., & Hoang, T. (2024). Enhancing EFL students' academic writing skills in online learning via Google Docs-based collaboration: A mixed-methods study. *Computer Assisted Language Learning*, 37(7), 1504-1526.

Holozsai, J., & József, H. (2024). Aspects of digital learning among foreign language learners in secondary education.

Ironsi, C. S. (2022). Google Meet as a synchronous language learning tool for emergency online distant learning during the COVID-19 pandemic: Perceptions of language instructors and preservice teachers. *Journal of Applied Research in Higher Education*, 14(2), 640-659.

Islam, M. K., Sarker, M. F. H., & Islam, M. S. (2022). Promoting student-centred blended learning in higher education: A model. *E-learning and Digital Media*, 19(1), 36-54.

Issa, T., Alqahtani, S. G. B., Al-Oqily, I., Goktalay, S. B., Köse, U., Issa, T., . . . Almufaraj, W. K. (2021). Use of social networking in the Middle East: student perspectives in higher education. *Heliyon*, 7(4).

James, J. (2021). Confronting the scarcity of digital skills among the poor in developing countries. *Development Policy Review*, 39(2), 324-339.

James, J. (2021). Confronting the scarcity of digital skills among the poor in developing countries. *Development Policy Review*, 39(2), 324-339.

Jamil, S. (2021). From digital divide to digital inclusion: Challenges for wide-ranging digitalization in Pakistan. *Telecommunications Policy*, 45(8), 102206.

Kartal, G. (2024). Evaluating a mobile instant messaging tool for efficient large-class speaking instruction. *Computer Assisted Language Learning*, 37(5-6), 1252-1280.

Kocdar, S., & Bozkurt, A. (2023). Supporting learners with special needs in open, distance, and digital education. In *Handbook of open, distance and digital education* (pp. 881-895): Springer.

Lazar, I. M., Panisoara, G., & Panisoara, I. O. (2020). Digital technology adoption scale in the blended learning context in higher education: Development, validation and testing of a specific tool. *PloS one*, 15(7), e0235957.

Lee, C. (2022). Intention to use versus actual adoption of technology by university English language learners: what perceptions and factors matter? *Computer Assisted Language Learning*, 35(8), 2049-2077.

Li, T. (2024). The Role of Interactive Mobile Learning in Enhancing University Students' Foreign Language Writing Skills. *International Journal of Interactive Mobile Technologies,* 18(14).

Liu, L. (2024). Impact of AI gamification on EFL learning outcomes and nonlinear dynamic motivation: Comparing adaptive learning paths, conversational agents, and storytelling. *Education and Information Technologies*, 1-40.

Liu, L. (2024). Impact of AI gamification on EFL learning outcomes and nonlinear dynamic motivation: Comparing adaptive learning paths, conversational agents, and storytelling. *Education and Information Technologies*, 1-40.

Maher, D. (2020). Video conferencing to support online teaching and learning. Teaching, technology, and teacher education during the COVID-19 pandemic: Stories from the field.

Mai, T. M., Nguyen, L. T., Tran, T. L., & Le, T. V. (2020). EFL teachers' Facebook groups as online communities of practice: Toward configurations for engagement and sustainability. *Computer-Assisted Language Learning Electronic Journal*, 21(3), 140-158.

McHaney, R. (2023). *The new digital shoreline: How Web 2.0 and millennials are revolutionizing higher education*. Taylor & Francis.

Memon, F. N., & Memon, S. N. (2025). Digital Divide and Equity in Education: Bridging Gaps to Ensure Inclusive Learning. In *Impact of Digitalization on Education and Social*

Sustainability (pp. 107-130): IGI Global.

Michaelsen, A. S. (2020). Digital tools for the classroom. In *The Digital Classroom* (pp. 16-36): Routledge.

Muchmore, M., & Dilly, J. (2020). The best cloud storage and file-sharing services for 2020. In.

Müller, S. (2023). How Slack facilitates communication and collaboration in seminars and project-based courses. *Journal of Educational Technology Systems*, 51(3), 303-316.

Murgatroyd, S. (2024). *The future of higher education in an age of artificial intelligence*. Ethics International Press.

Ngozi, C. N., Anuonye, F. D., & Obioma, H. U. (2024). Innovative Pedagogies And Digital Solutions: Transforming Language Teacher Education In Nigeria Using Google Classroom And Google Meet. *Ideal International Journal*, 17(3).

Nykyporets, S., & Boiko, Y. V. (2024). Practical tips and interactive learning tools for the work of a foreign language teacher at a technical university in the conditions of blended learning during the full-scale military aggression of Russia against Ukraine. World trends in the use of interactive technologies in education: International collective monograph. Lima, Peru, 2024. *Chap*. 14. P. 322-348.

Okoye, K., Hussein, H., Arrona-Palacios, A., Quintero, H. N., Ortega, L. O. P., Sanchez, A. L., . . . Hosseini, S. (2023). Impact of digital technologies upon teaching and learning in higher education in Latin America: an outlook on the reach, barriers, and bottlenecks. *Education and Information Technologies*, 28(2), 2291-2360.

Oliver, P. G., & Oliver, S. (2022). Innovative online learning in entrepreneurship education: The impact of embedding real-life industry practice in the virtual learning environment. *Industry and Higher Education*, 36(6), 756-767.

Pastini, N. W., & Lilasari, L. N. T. (2023). Empowering EFL students: A review of student-centred learning effectiveness and impact. *Journal of Applied Studies in Language*, 7(2), 246-259.

Qasim, S. H. (2024). Beyond the classroom: Emerging technologies to enhance learning.

QIZI, S. X. J. (2025). Technology-Enhanced Language Learning (Tell). *Образование Наука И Инновационные Идеи В Мире,* 62(3), 257-262.

Raes, A., Detienne, L., Windey, I., & Depaepe, F. (2020). A systematic literature review on synchronous hybrid learning: gaps identified. *Learning environments research*, 23, 269-

290.

Rehman, Z.-u., & Iqbal, A. (2024). Investigating the Challenges of Using Duolingo for Language Learning: A Simplified Review. *Contemporary Journal of Social Science Review*, 2(04), 863-878.

Rossiter, E., Thomson, T., & Fitzgerald, R. (2024). Supporting university students' learning across time and space: a from-scratch, personalised and mobile-friendly approach. *Interactive Technology and Smart Education*, 21(1), 108-130.

Sadiqzade, Z., & Alisoy, H. (2025). Cybersecurity and Online Education–Risks and Solutions. *Luminis Applied Science and Engineering*, 2(1), 4-12.

Saleem, M., Warsi, M., & Islam, S. (2023). Secure information processing for multimedia forensics using zero-trust security model for large scale data analytics in SaaS cloud computing environment. *Journal of Information Security and Applications*, 72, 103389.

Sandua, D. (2024). *The Double Sides Of Technology: Internet Addiction And Its Impact On Today's Society*. David Sandua.

Silva, P. (2015). Davis' technology acceptance model (TAM)(1989). In *Information seeking behavior and technology adoption: Theories and trends*, 205-219.

Silvhiany, S., Huzaifah, S., & Ismet, I. (2021). Critical digital literacy: EFL students' ability to evaluate online sources. *Indonesian Journal of EFL and Linguistics*, 6(1), 249.

Sjølie, E., Espenes, T. C., & Buø, R. (2022). Social interaction and agency in self-organizing student teams during their transition from face-to-face to online learning. *Computers & Education*, 189, 104580.

Skafi, M., Yunis, M. M., & Zekri, A. (2020). Factors influencing SMEs' adoption of cloud computing services in Lebanon: An empirical analysis using TOE and contextual theory. *IEEE Access*, 8, 79169-79181.

Sleeman, J., Lang, C., & Dakich, E. (2020). Social media, learning and connections for international students: The disconnect between what students use and the tools learning management systems offer. *Australasian Journal of Educational Technology*, 36(4), 44-56.

Suciu, G., Stefanescu, S., Beceanu, C., & Ceaparu, M. (2020). WebRTC role in real-time communication and video conferencing. Paper presented at the *2020 Global Internet of Things Summit (GIoTS*).

Sufi, M. I. F., Afrida, N., Meutia, C. I., & Daulay, S. H. (2024). Discovering the power of

Discord: Members' experiences and their performances in learning English. *Journal of Research on English and Language Learning (J-REaLL),* 5(2), 205-220.

Tauchid, A., Barata, M. A., Wafa, K., & Wijayanti, R. (2024). Navigating challenges in remote speaking tasks: Unveiling technical and non-technical problems faced by students. *The International Review of Research in Open and Distributed Learning*, 25(4), 87-106.

Tennakoon, H., Hansen, J. M., Saridakis, G., Samaratunga, M., & Hansen, J. W. (2023). Drivers and barriers of social sustainable development and growth of online higher education: the roles of perceived ease of use and perceived usefulness. *Sustainability,* 15(10), 8319.

Thatphaiboon, R., & Sappapan, P. (2022). The Effects of the Flipped Classroom through Online Video Conferencing on EFL Learners' Listening Skills. *Arab World English Journal*, 13(3).

Thomas, C. G., & Thomas, C. G. (2021). *Note Taking, Note Making, and Assignments*. In: Springer.

Thomas, L., & Bhat, S. (2022). A Comprehensive Overview of Telegram Services-A Case Study. Int. J. Case Stud. Bus. *IT Educ. IJCSBE,* 6(1), 288-301.

Tran, N., Hoang, D. T. N., Gillespie, R., Yen, T. T. H., & Phung, H. (2024). Enhancing EFL learners' speaking and listening skills through authentic online conversations with video conferencing tools. *Innovation in Language Learning and Teaching*, 1-11.

Tran, T. Q. (2021). Social networking: A collaborative open educational resource. *International Journal of TESOL & Education,* 1(2), 148-157.

Vogiatzis, D. (2022). *The Use of Social Media Platforms for Foreign Language Learning in Adult and Community Education*. Open University (United Kingdom),

Wan, L., Wang, K., Wang, H., & Bai, G. (2024). Is it safe to share your files? an empirical security analysis of google workspace. Paper presented at *the Proceedings of the ACM Web Conference 2024*.

Wu, J. (2024). E-learning management systems in higher education: Features of the application at a Chinese vs. European university. *Journal of the Knowledge Economy*, 1-31.

Xu, Z. (2024). AI in education: Enhancing learning experiences and student outcomes. *Applied and Computational Engineering,* 51(1), 104-111.

Zaineldeen, S., Hongbo, L., Koffi, A. L., & Hassan, B. M. A. (2020). Technology acceptance

model'concepts, contribution, limitation, and adoption in education. *Universal Journal of Educational Research,* 8(11), 5061-5071.

Zarei, S., & Mohammadi, S. (2022). Challenges of higher education related to e-learning in developing countries during COVID-19 spread: a review of the perspectives of students, instructors, policymakers, and ICT experts. *Environmental science and pollution research,* 29(57), 85562-85568.