University Students' Perception of Digital Technology in Self-Directed English Learning: Types and Effectiveness

Puteri Nur Sabrina Najwa Binti Mohd Nasir, Sundari Subasini a/p Nesamany

Faculty of Education and Humanities, UNITAR International University, Malaysia
Corresponding Author Email: sundari@unitar.my

Abstract
This research aimed to investigate the use of social media platforms, language apps, and languages by undergraduate students in Malaysia in various self-directed English learning contexts, and also to determine the effectiveness of these tools. Using quantitative research approach, this study employed a close-ended and structured 4-point Likert scale questionnaire to collect the data. The questionnaire was administered to 120 undergraduate students from a local private university in Selangor, through simple random sampling. It was found that undergraduate students in Malaysia effectively utilise three types of digital technologies, namely social media platforms, language apps, and language blogs, for self-directed English learning. The researchers recommend larger sample sizes for a more comprehensive representation of the population and to conduct separate studies for each language skill providing detailed insights into the types of digital technology utilized in each language skill.
Keywords: Self-Directed English Learning, Technology, Social Media Platforms, Language Apps, Language Blogs, English Education

Introduction
The English language is globally dominant as a preferred means of communication, offering numerous personal and business opportunities and broadening one's perspective. However, many struggle to speak and understand English fluently, leading to feelings of disconnection, low confidence, and hindered goals. In recent times, digital technologies have made learning English more accessible, particularly for students, who now have a wealth of resources and online platforms available. Students can personalize their experience and learn efficiently without relying solely on teachers. Traditional approaches to education are being replaced by technology-driven methods to meet the needs of the sector. In Malaysia, information and communication technologies play a significant role in promoting digital education, especially for Generation Z and Generation Alpha (Ahmad et al., 2019), who have grown up in the technology era (Tafonao et al., 2020). Using digital technologies in language learning can enhance students' motivation and attitude by allowing personalized learning, immediate

feedback, and autonomous planning, management, and evaluation of their learning process (Kim & Bae, 2020). However, research on digital technologies for self-directed English learning among undergraduate students in Malaysia is scarce. Hence, the focus of this research was to investigate the use of social media platforms, language apps, and languages by undergraduate students in Malaysia in various self-directed English learning contexts, and to determine the effectiveness of these tools in said contexts.

Literature Review

Self-directed learning refers to the independent pursuit of knowledge by individuals, as they take charge of their own learning process (Kapur, 2019). While there are various related concepts, it is important to focus on Knowles' definition (1975) for this study involving adult undergraduate students. According to Knowles (1975) as cited in Loeng (2020), self-directed learning is an informal process where individuals independently plan, execute, and assess their own learning experiences outside of formal classroom settings. The learner assumes responsibility for determining their needs, setting goals, identifying resources, implementing a learning plan, and evaluating outcomes. Essentially, self-directed learning involves individuals taking the initiative and accountability for their own learning.

Technological advancements have greatly impacted education, specifically in the learning of English. Students now have access to interactive tools like email, social networks, and video communication, allowing them to engage with native speakers (Arif et al., 2022). Technology also enhances traditional education by increasing efficiency and effectiveness and facilitating the acquisition of knowledge and skills (Courville, 2011). Educational institutions have incorporated technology into their curricula to promote student engagement and success (Harris et al., 2016). Digital technologies offer unique advantages, such as developing problem-solving skills and facilitating comprehension (Haleem et al., 2022). The introduction of mobile phones, smartboards, tablets, and other tools has transformed education (Halim, 2021).

Social media platforms play a dominant role in undergraduate students' English learning, improving vocabulary development and facilitating efficient reading, writing, and communication (Khan et al., 2016; Muftah, 2022). Language apps, like Duolingo, are increasingly used to enhance language skills in listening, reading, speaking, writing, grammar, vocabulary, and spelling (Mindog, 2016; Saad & Rahim, 2022). Language blogs offer benefits such as developing reading and writing skills, encouraging critical analysis and debate, and promoting learner autonomy (Fattah, 2016; Miftachudin, 2017). These digital technologies support authentic learning by connecting classroom knowledge to real-world applications, fostering motivation, decision-making, and interaction (Lombardi, 2007; Ozverir et al., 2017). Students can also develop practical skills through technology, such as effective communication, information evaluation, and online etiquette (Prayudi et al., 2021).

Methodology

This research utilized a quantitative research approach, employing a close-ended and structured 4-point Likert scale questionnaire to collect quantitative data. The questionnaire was administered to 120 undergraduate students (66 female, 54 male) from a local private university in Selangor. Simple random sampling was used in this research. The research objectives, questions, hypotheses, and survey questions were created by the researchers to investigate the types and effectiveness of digital technologies used by undergraduate students in Malaysia for self-directed English learning. Demographic-related questions were

also asked. The researchers prepared the questionnaire, distributed it to the respondents, collected the responses, and processed the results using the Statistical Package for the Social Sciences (SPSS) program. Tables presenting percentages, means, and standard deviations were generated for each digital technology category to summarize the findings. Normality and hypothesis tests were conducted. The normality analysis aimed to determine if the data followed a normal distribution, while the hypothesis analysis aimed to decide whether to accept or reject the null hypotheses.

Findings
Most of the respondents (45%) fell within the age range of 21 to 23, indicating a relatively young sample (M = 1.95, SD = .787). Females represent most respondents, accounting for 55%. The highest English qualification chosen by students is as follows: SPM (46.7%), MUET (42.5%), IELTS (6.7%), IGCSE (2.4%), and Bachelor (1.6%). When assessing their English proficiency, most students perceive themselves as intermediate (58.3%), followed by advanced (30%) and beginner (11.7%).
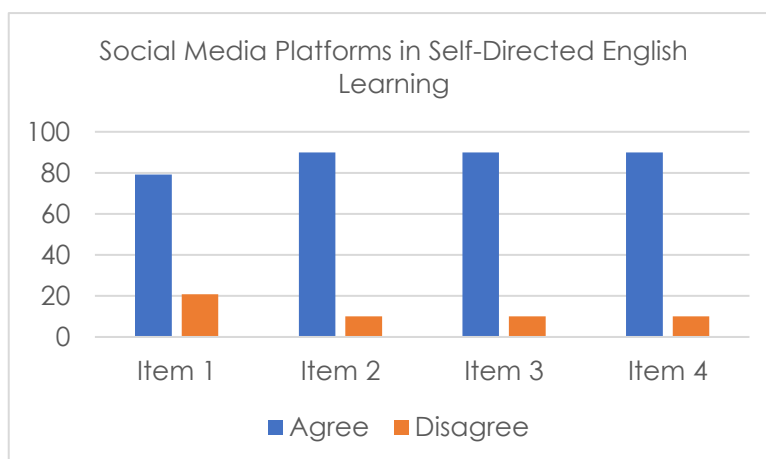

Figure 1. Summary of social media platform use in various self-directed English learning contexts.

The survey results on social media use for English learning indicate strong support from most respondents. Item 1 shows that 79.17% (n=95) agree to using social media for independent English learning. Item 2 reveals 90% (n=108) of respondents use social media to read English texts. Item 3 indicates 90% (n=108) also use social media to communicate orally in English. Lastly, item 4 shows 90% (n=108) use social media for writing in English.

Table 1
Table showing the mean and standard deviation for social media platform use in various self-directed English learning contexts.

	Item	Mean	SD
1	I use social media platforms to learn English on my own.	3.13	.885
2	I use social media platforms to read English texts.	3.33	.790
3	I use social media platforms to communicate orally.	3.32	.745
4	I use social media platforms to write in English.	3.34	.750
Average IV1		3.2771	.70174

The mean and standard deviation were calculated for the four items mentioned. The highest mean, indicating strong agreement, was observed for item 4, "I use social media platforms to write in English" (M = 3.34). This suggests that undergraduate students utilize social media platforms for writing in English. Item 1, "I use social media platforms to learn English on my own," had the highest standard deviation (SD = .885), indicating greater variability in responses. Overall, the mean for the first independent variable is 3.2771, with a standard deviation of .70174.
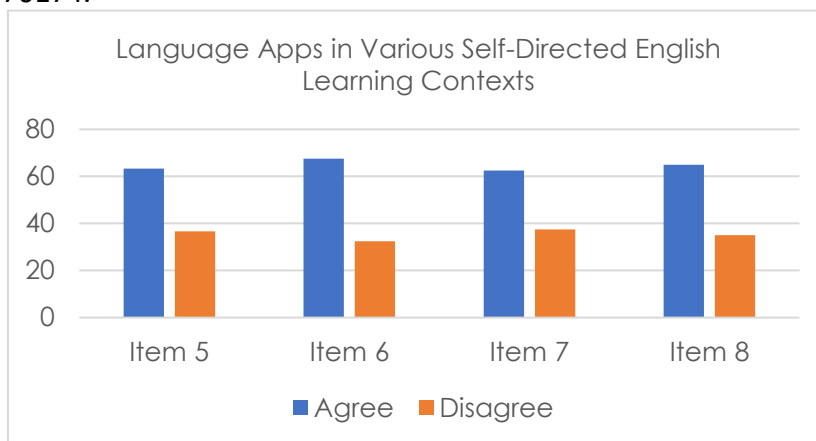

Figure 2. Summary of language apps use in various self-directed English learning contexts.

Many respondents strongly agree with the use of language apps for self-directed English learning. For example, item 5 indicates that 63.4% (n=76) of respondents use language apps for independent English learning. Item 6 shows that 67.5% (n=81) use language apps to read English texts, while item 7 reveals that 63% (n=75) use them for oral communication in English. Lastly, item 8 demonstrates that 65% (n=78) of respondents use language apps for writing in English.

Table 2
Table showing the mean and standard deviation for language app use in various self-directed English learning contexts.

	Item	Mean	SD
5	I use language apps to learn English on my own.	2.88	.931
6	I use language apps to read English texts.	2.92	.936
7	I use language apps to communicate orally.	2.84	.935
8	I use language apps to write in English.	2.88	.949
Average IV2		2.8792	.88699

The mean and standard deviation of the four items were calculated. Results indicate that the highest mean (M = 2.92) is for item 6, which states "I use language apps to read in English." Similarly, the highest standard deviation (SD = .949) is for item 8, which states "I use language apps to write in English." In total, the second independent variable has a mean of 2.8792 and a standard deviation of .88699.
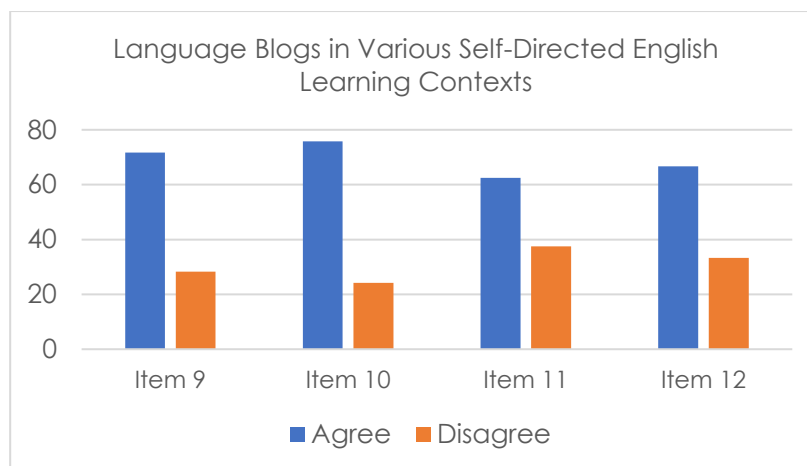
Figure 3. Summary of language blogs use in various self-directed English learning contexts.
According to the survey data, a significant majority of respondents engage with language blogs for self-directed English learning across different contexts. For instance, item 9 indicates that 71.7% (n=86) of respondents use language blogs for independent English learning. Similarly, item 10 highlights that 76% (n=91) of respondents utilize language blogs for reading English texts. Furthermore, item 11 reveals that 63% (n=75) of respondents employ language blogs for oral communication in English. Finally, item 12 demonstrates that 67% (n=80) of respondents utilize language blogs for writing in English.

Table. 3
Table showing the mean and standard deviation for language blog use in various self-directed English learning contexts.

	Item	Mean	SD
9	I use language blogs to learn English on my own.	2.93	.900
10	I use language blogs to read English texts.	3.01	.884
11	I use language blogs to communicate orally.	2.86	.955
12	I use language blogs to write in English.	2.90	.929
Average		2.9229	.85368
IV3			

Based on table 3, the results indicate that the item with the highest mean is "I use language blogs to read English texts" (M = 3.01). Furthermore, the item with the highest standard deviation is "I use language blogs to communicate orally" (SD = .955). Overall, the third independent variable has a total mean of 2.9229 and a total standard deviation of .85368.
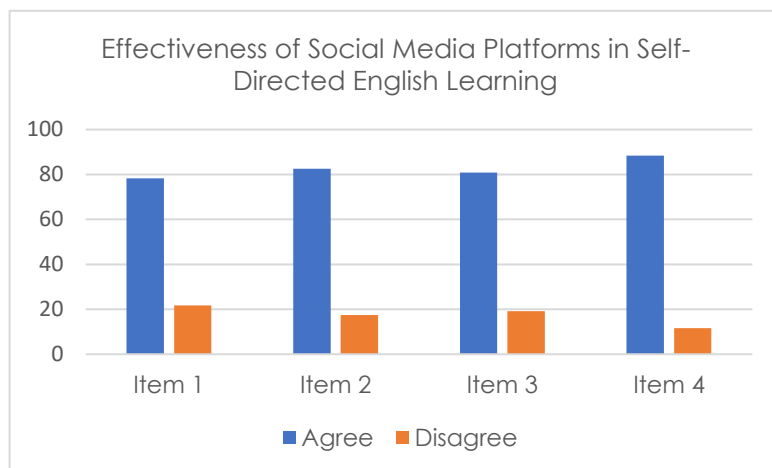
Figure 4. Summary of effectiveness of social media platforms use in various self-directed English learning contexts.

Most respondents strongly support the effectiveness of social media platforms in self-directed English learning. In item 1, 78.3% (n=94) of respondents find social media platforms effective for independent English learning. Similarly, item 2 indicates that 82.5% (n=99) of respondents consider social media platforms to be effective for finding quality English reading materials. Additionally, item 3 reveals that 81% (n=97) of respondents believe that social media platforms effectively enhance their oral communication skills in English. Finally, item 4 demonstrates that an overwhelming 88.3% (n=106) of respondents highly value social media platforms for improving their English writing abilities.

Table. 4
Table showing the mean and standard deviation for effectiveness of social media platform use in various self-directed English learning contexts.

	Item	Mean	SD
1	I think social media platforms are effective at helping me learn English on my own.	3.15	.913
2	I think social media platforms are effective for finding good sources of English reading materials.	3.23	.877
3	I think social media platforms are effective for me to communicate orally in English.	3.22	.881
4	I think social media platforms are effective at providing me the opportunity to write in English.	3.29	.782

The analysis of the four items revealed interesting findings. The item with the highest mean score is item 4, indicating that respondents highly believe that social media platforms are effective at providing them with the opportunity to write in English (M = 3.29). On the other hand, item 1 has the highest standard deviation, suggesting that opinions regarding the effectiveness of social media platforms for independent English learning vary more widely among respondents (SD = 0.913).
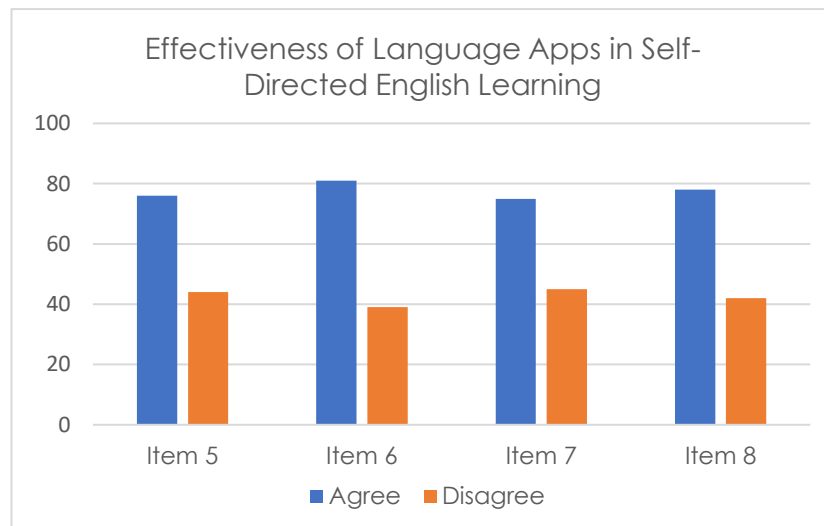
Figure 5. Summary of effectiveness of language apps use in various self-directed English learning contexts.

The data above suggests that language apps are highly effective for self-directed English learning. In item 5, 78.3% (n=94) of respondents reported the effectiveness of language apps in helping them learn English independently. Similarly, item 6 revealed that 76.6% (n=92) of respondents found language apps effective in locating quality English reading materials. In item 7, 72.5% (n=87) of respondents believed that language apps effectively supported their oral communication skills in English. Additionally, item 8 indicated that 76.6% (n=92) of respondents found language apps to be effective in facilitating their English writing practice.

Table. 5
Table showing the mean and standard deviation for effectiveness of language apps use in various self-directed English learning contexts.

	Item	Mean	SD
5	I think language apps are effective at helping me learn English on my own.	3.12	.885
6	I think language apps are effective for finding good sources of English reading materials.	3.11	.896
7	I think language apps are effective for me to communicate orally in English.	3.03	.961
8	I think language apps are effective at providing me the opportunity to write in English.	3.07	.918

The analysis of the four items provided interesting insights. Item 5, "I think language apps are effective at helping me learn English on my own," received the highest mean score (M = 3.12), indicating that respondents generally perceive language apps as effective for independent English learning. Conversely, item 7, "I think language apps are effective for me to communicate orally in English," exhibited the highest standard deviation (SD = 0.961), suggesting more varied opinions regarding the effectiveness of language apps for oral communication in English.
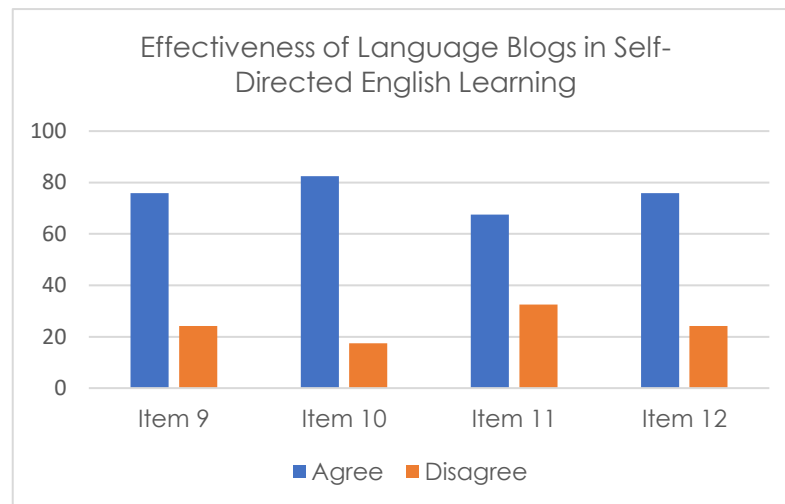
Figure 6. Summary of effectiveness of language blogs use in various self-directed English learning contexts.

Respondents highly support the effectiveness of language blogs in self-directed English learning contexts. Item 9 reveals that 75.8% (n=91) agree that language blogs are effective for independent English learning. This is further corroborated by item 10, where 82.5% (n=99) of respondents believe that language blogs are effective for finding quality English reading materials. Moreover, item 11 indicates that 67.5% (n=81) of respondents consider language blogs effective for oral communication in English. Lastly, item 12 demonstrates that 75.8% (n=91) of respondents find language blogs effective for English writing opportunities.

Table. 6
Table showing the mean and standard deviation for effectiveness of language blogs use in various self-directed English learning contexts.

	Item	Mean	SD
9	I think language blogs are effective at helping me learn English on my own.	3.15	.913
10	I think language blogs are effective for finding good sources of English reading materials.	3.23	.877
11	I think language blogs are effective for me to communicate orally in English.	3.22	.881
12	I think language blogs are effective at providing me the opportunity to write in English.	3.29	.782

Like the previous items, mean and standard deviation were calculated. The item with the highest mean score is item 12, "I think language blogs are effective at providing me the opportunity to write in English" (M = 3.29). This indicates that respondents highly believe that language blogs are effective for writing in English. On the other hand, item 9, "I think language blogs are effective at helping me learn English on my own," has the highest standard deviation (SD = 0.913), suggesting that opinions regarding the effectiveness of language blogs for independent English learning vary more widely among respondents.

Table. 7
Table showing the combined mean and standard deviation for the overall perception towards the effectiveness of digital technologies in various self-directed English learning contexts.

Item	Mean	SD
Total DV	3.1111	.69077

The combined mean for the dependent variable is 3.1111, indicating the overall perception of the respondents. Similarly, the standard deviation is .69077, reflecting the level of variation in their opinions. The decision to aggregate the items was made to gain a comprehensive understanding of the overall perception of the dependent variable, which was the effectiveness of digital technologies.

Table 8
Table showing the results of the Kolmogorov-Smirnova test.

Kolmogorov-Smirnov	Sig.
Total_IV1	<.001
Total_IV2	<.001
Total_IV3	<.001
Total_DV	<.001

A normality test was conducted to determine if the sample data was obtained from a population with a normal distribution. The table above displays the outcomes of the Kolmogorov-Smirnov normality test for the three independent variables and one dependent variable. The Kolmogorov-Smirnov test results indicate that Total_IV1, Total_IV2, Total_IV3, and Total_DV all have P values of .000 (reported as <.001 in SPSS). According to the test, data should have P values above 0.05 to be considered normally distributed. Since the P values in the table are below 0.05, it can be concluded that the data are not normally distributed.

Table 9
Table showing the results of the Pearson Correlation analysis.

		Total_IV1	Total_IV2	Total_IV3	Total_DV
Total_IV1	Correlation	1	.411**	.253**	.532**
	Sig. (2-tailed)		<.001	.005	<.001
Total_IV2	Correlation	.411**	1	.637**	.713**
	Sig. (2-tailed)	<.001		<.001	<.001
Total_IV3	Correlation	.253**	.637**	1	.629**
	Sig. (2-tailed)	.005	<.001		<.001
Total_DV	Correlation	.532**	.713**	.629**	1
	Sig. (2-tailed)	<.001	<.001	<.001	

**. Correlation is significant at the 0.01 level (2-tailed).

Based on the table, significant and positive correlations were observed between the variables. The correlation between Total_IV1 and Total_DV was moderately positive and statistically significant ($r = .532$, $p < .001$). Additionally, the correlation between Total_IV2 and Total_DV

was strongly positive and statistically significant (r = .713, p < .001). Similarly, the correlation between Total_IV3 and Total_DV was also strongly positive and statistically significant (r = .629, p < .001). These conclusions were drawn based on a significance level of 0.01, as determined by SPSS.

Table 10
Table showing the results of the Hypothesis analysis.

Hypothesis	Result
H1: Undergraduate students use social media platforms in self-directed English learning because social media platforms are effective.	Accepted
H2: Undergraduate students use language apps in self-directed English learning because language apps are effective.	Accepted
H3: Undergraduate students use language blogs in self-directed English learning because language blogs are effective.	Accepted

Table 10 presents the results of the hypothesis analysis, with a significance level of 0.01. The Kolmogorov-Smirnov test and Pearson Correlation analysis reported significant values (p<.001) for the variables. These results indicate strong evidence against the null hypothesis in favor of the alternative hypothesis. Consequently, the alternative hypotheses are accepted, leading to the rejection of the null hypotheses.

Discussion
The findings confirmed that undergraduate students in Malaysia utilize three types of digital technologies, namely social media platforms, language apps, and language blogs, for self-directed English learning. Regarding social media platforms, high agreement percentages were observed for items related to learning English, reading English texts, oral communication, and writing in English. The overall average perception was positive (M = 3.2771), aligning with previous studies (Khan et al., 2016; Mushtaq & Benraghda, 2018) showing that students use social media positively for educational purposes.
Language apps were found to be used by undergraduates for learning English, reading texts, oral communication, and writing in English. These findings align with previous research (Hossain, 2018) highlighting the preference of intermediate English language learners for using language apps to enhance their listening, reading, speaking, and writing skills. The overall mean score for language apps was 2.8792, indicating a generally positive attitude towards their use in self-directed English learning.
Similarly, the findings confirmed the use of language blogs by undergraduate students for self-directed English learning. The overall average perception towards language blogs was positive (M = 2.922), supported by high agreement percentages for items related to learning English, reading English texts, oral communication, and writing in English. These findings are also consistent with previous research by Salatiga (2017) that emphasized students' positive perception of language blogs as beneficial tools for English language learning, particularly in the areas of writing, reading, and communication.

There is a positive correlation (r = .532, p < .001) between the use of social media platforms and their effectiveness in self-directed English learning. Although no Malaysian-based study was found for comparison, previous non-Malaysian studies discussed the role of social media platforms in English learning, without specifically addressing their effectiveness. While further research is needed to fully understand the degree of effectiveness, it is evident that undergraduate students rely on social media platforms.

Similarly, there is a strong positive correlation (r = .713, p < .001) between the use of language apps and their effectiveness in self-directed English learning. This finding aligns with a study by Saad and Rahim (2022), who found language apps to be effective for French language acquisition among Malaysian learners. Additionally, Kruchinin and Bagrova (2021) suggested that language apps are valuable for reading and grammar learning but may have limitations in practicing oral and writing skills.

Regarding language blogs and their effectiveness in self-directed English learning, a positive correlation (r = .629, p < .001) was observed. This is consistent with the findings of Miftachudin (2017), who highlighted undergraduate students' positive perception of blogs for English language learning in writing, reading, and communication. However, Hasan and Ibrahim (2017) noted that language blogs tend to focus more on reading and writing skills, while neglecting listening and speaking skills.

Overall, the findings indicate a positive perception among undergraduate students towards digital technologies and their effectiveness in self-directed English learning contexts. Mobile applications, when used as learning aids, have been found to enhance speaking and critical thinking skills in English language learning (Kusmaryani et al., 2019). Additionally, technology can support authentic language learning by providing various resources, opportunities for interaction, and real-life language use (Ozverir et al., 2017).

Conclusion

This study sheds light on the types and effectiveness of digital technologies utilized by Malaysian undergraduate students in different self-directed English learning situations. Specifically, the study explores the usage and effectiveness of social media platforms, language apps, and language blogs. The findings indicate that these digital tools are commonly employed by undergraduate students in Malaysia for various self-directed English learning purposes, such as self-directed English learning, reading English texts, oral communication in English, and writing in English. These results contribute to the limited research on the usage of digital technologies by Malaysian undergraduate students in diverse self-directed English learning scenarios. Educators and policymakers seeking insights into the significant role of digital technologies in English education in Malaysia can benefit from the general knowledge provided by this study. While this research provides valuable insights into students' perceptions of digital technologies and their effectiveness, it does have certain limitations, such as time constraints, a proper pilot test with qualified individuals could not be conducted, a relatively small sample size, and existing studies on digital technologies in self-directed English learning in Malaysia are limited. To enhance future research in this area, it is advised to enlarge the sample size to obtain a more comprehensive representation of the population, leading to more precise findings. Additionally, conducting separate studies for each language skill, such as reading, writing, listening, and speaking, would provide a more profound insight into the types of digital technology utilized in each specific area.

References

Ahmad, M. K., Adnan, A. H., Yusof, A. A., Kamal, M. A., & Kamal, N. N. (2019). Using New Technologies to Teach English in Malaysia - Issues and Challenges'. Proceedings: International Invention, Innovative & Creative (InIIC) Conference, (1), 203-207. https://www.researchgate.net/publication/334824081_Using_new_technologies_to_teach_English_in_Malaysia_-_issues_and_challenges

Arif, T. Z. Z. A., Sulistiyo, U., Ubaidillah, M. F., Handayani, R., Junining, E., & Yunus, M. (2022). A Look at Technology Use for English Language Learning from a Structural Equation Modeling Perspective. Computer-Assisted Language Learning Electronic Journal (CALL-EJ), 23(2), 18-37.

https://www.researchgate.net/publication/361364769_A_Look_at_Technology_Use_for_English_Language_Learning_from_a_Structural_Equation_Modeling_Perspective

Caravello, M. J., Jimenez, J. R., Kahl, L. J., Brachio, B., & Morote, E. S. (2015). Self-Directed Learning: College Students' Technology Preparedness Change in the Last 10 Years. Journal of Leadership and Instruction, 18-25.
https://files.eric.ed.gov/fulltext/EJ1080605.pdf

Courville, K. (2011). Technology and its use in Education: Present Roles and Future Prospects. 1-19. https://files.eric.ed.gov/fulltext/ED520220.pdf

Fattah, S. F. E. S. A. (2016). The Effectiveness of Using Blogs as an Independent Learning Tool to Develop Reading Skills for University Students. Journal of Education and Practice, 7(32), 65-73. https://files.eric.ed.gov/fulltext/EJ1122464.pdf

Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: a review. Sustainable Operations and Computers, 3, 275-285. https://doi.org/10.1016/j.susoc.2022.05.004

Halim, A. (2021). Importance of Digital Technology in English Language Learning. Journal of Linguistics and English Language Teaching, 1(1), 21-34. https://ijreeonline.com/article-1-120-en.pdf

Harris, J. L., Al-Bataineh, M. T., & Al-Bataineh, A. (2016). One to One Technology and its Effect on Student Academic Achievement and Motivation. Contemporary Educational Technology, 7(4), 368-381. https://files.eric.ed.gov/fulltext/EJ1117604.pdf

Hassan, M. M., & Ibrahim, F. (2017). Effects of Blog, Wiki and Google Docs in learning English Language: a Study of Bangladesh at Tertiary Level. Infrastructure University Kuala Lumpur Research Journal, 5(1), 39-49. https://iukl.edu.my/rmc/wp-content/uploads/sites/4/2019/01/5.-Md-Mahadhi-Hasan.pdf

Hossain, M. (2018). Exploiting Smartphones and Apps for Language Learning: A Case Study with The EFL Learners in a Bangladeshi University. Review of Public Administration and Management, 6(1), 2-5. https://www.walshmedicalmedia.com/open-access/exploiting-smartphones-and-apps-for-language-learning-a-case-studywith-the-efl-learners-in-a-bangladeshi-university-2315-7844-1000241.pdf

Kapur, R. (2019). Significance of ICT in Education. International Journal of Transformations in Business Management, 8(11), 20-33.
https://www.researchgate.net/publication/333198386_The_Significance_of_ICT_in_Education

Khan, I. U., Ayaz, M., & Faheem, M. (2016). The Role of Social Media in the Development of English Language Vocabulary at University Level. International Journal of Academic Research in Business and Social Sciences, 6(12), 590-604. https://hrmars.com/papers_submitted/2444/The_Role_of_Social_Media_in_Development_of_English_Language_Vocabulary_at_University_Level.pdf

Kim, G., & Bae, J. (2020). A Study Into Students' Use of Digital English Learning Strategies in Tertiary Education. Teaching English with Technology, 20(1), 21-42. https://files.eric.ed.gov/fulltext/EJ1242644.pdf

Kruchinin, S., & Bagrova, E. (2021). Quality of Mobile Apps for Language Learning. SHS Web of Conferences, 93, 1-5. https://www.shs-conferences.org/articles/shsconf/pdf/2021/04/shsconf_nid2020_01009.pdf

Kusmaryani, W., Musthafah, B., & Purnawarman, P. (2019). The influence of mobile applications on students' speaking skill and critical thinking in English language learning. Journal of Physic: Conference Series, 1-6. 10.1088/1742-6596/1193/1/012008

Loeng, S. (2020). Self-Directed Learning: A Core Concept in Adult Education. Education Research International, 4(5), 1-12. https://doi.org/10.1155/2020/3816132

Lombardi, M. (2007). Authentic Learning for the 21st Century: An Overview. https://www.researchgate.net/publication/220040581_Authentic_Learning_for_the_21st_Century_An_Overview

Miftachudin. (2017). Students' Perceptions of the Use of Blogs in English Language Learning. Language & Language Teaching Journals, 10(1), 101-121. https://www.academia.edu/37023703/Students_Perceptions_of_the_Use_of_Blogs_in_English_Language_Learning

Mindog, E. (2016). Apps and EFL: A case study on the use of smartphone apps to learn English by four Japanese university students. The JALT CALL Journal, 12(1), 3-22. https://files.eric.ed.gov/fulltext/EJ1107946.pdf

Muftah, M. (2022). Impact of social media on learning English language during the COVID-19 pandemic. PSU Research Review. https://www.emerald.com/insight/content/doi/10.1108/PRR-10-2021-0060/full/html

Mushtaq, A. J., & Benraghda, A. (2018). The Effects of Social Media on the Undergraduate Students' Academic Performances. Library Philosophy and Practice (e-journal), 1779. https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=5020&context=libphilprac

Ozverir, I., Osam, U., & Herrington, J. (2017). Investigating the effects of authentic activities on foreign language learning: A design-based research approach. Educational Technology & Society, 20(4). 261–274. https://www.researchgate.net/publication/320628478_Investigating_the_effects_of_authentic_activities_on_foreign_language_learning_A_design-based_research_approach

Prayudi, R. A., Hakiki, A. K., Putra, N. R. D., Anzka T. O., & Ihsan, M. T. (2021). The Use of Technology in English teaching & learning process. Jurnal Riset dan Inovasi Pembelajaran, 1(2), 102-111. https://doi.org/10.51574/jrip.v1i2.38

Saad, S. M., & Rahim, N. A. A. (2022). Vocabulary Acquisition using Duolingo in French Language Learning: a Malaysian Context. Journal of Social Sciences and Humanities, 19(2), 256-281. http://journalarticle.ukm.my/19887/1/54226-178422-1-SM.pdf

Tafonao, L., Saputra, S., & Suryaningwidi, R. (2020). Learning Media and Technology: Generation Z and Alpha. Indonesian Journal of Instructional Media and Model, 2(2), 89-100.

https://www.researchgate.net/publication/347544062_Learning_Media_and_Technology_Generation_Z_and_Alpha