

Evaluating Students' Views on Using Social Media Sites to Learn English Language

Razia Mohammed Aslam Khan

Department of English Language and Translation,
College of Arts and Education,
Tabuk University, Tabuk, Saudi Arabia
raslamkhan@ut.edu.sa

Abstract: Students currently make heavy use of Facebook (FB) and other social media sites in the hopes that these will improve their ability to work together in class. To answer the question of whether this method of instruction could enhance students' grasp of the English language, this study will survey the literature on Facebook as a medium for ESL instruction. Furthermore, it plans to examine the impact of four interventions on students' attitudes towards studying English on Facebook in terms of confidence, passion, inspiration, and language progress. Three hundred people filled out the survey at Delhi University in India. It was found out that the pupils were considering using Facebook as a tool to supplement their English studies. Teachers need to use Facebook as an instructional tool with predetermined aims and outcomes if students are to effectively acquire new information. Based on the results, it seems that EFL students view Facebook as a place that promotes, assists, and facilitates their English language study. Students' enthusiasm and self-assurance for learning English both rose after utilising Facebook, according to the findings. Additionally, the survey showed that pupils were in favour of this kind of instruction. Considering the study's findings, TEFL instructors are encouraged to incorporate social networking sites like Facebook into their lesson plans.

Keywords: English Language; Students Perspective; social media; Facebook; Learning.

Introduction

The pervasive utilisation of social media and information technologies has significantly influenced society at large, with particular ramifications for the educational sector in recent years. Individuals are able to engage in a multitude of ways due to their diverse formats, including blogging, social networks, weblogs, wikis, video podcasting, and photo sharing. Platforms such as Twitter, YouTube, Facebook, and WhatsApp significantly enhance social interaction and the dissemination of information within networks comprising both educators and learners [1]. The intrinsic human yearning for exploration, boundless connectivity, and the unimpeded sharing of ideas and perspectives with like-minded individuals may serve as the fundamental impetus for such an advancement. Individuals engaging with social media platforms are afforded the opportunity to connect, articulate their thoughts, and traverse geographical boundaries through these digital tools. Considering that these digital interactions are likely to take place within the same linguistic community or across different ones, it follows that the opportunities afforded by social media today could be intellectually advantageous for users, whether they are learners or educators. With a staggering 1.86 billion members, Facebook stands as one of the most prominent applications, securing its position as the most popular social platform ever created. The capacity to transmit and receive an unprecedented volume of text messages, images, and videos has afforded both foreign language educators and learners' remarkable opportunities that were once inconceivable. The selections available can afford individuals, particularly those acquiring a new language, the chance to interact with novel texts, thereby enhancing their abilities and gradually assimilating new vocabulary.

Educators might benefit from Facebook by employing it as a medium to disseminate a variety of materials, which can subsequently be utilised, modified, and shared by their students to achieve intended objectives. Consequently, the educational experience may become increasingly inclusive and learner-focused, as it allows for greater autonomy among students to participate, thereby nurturing a culture of collaboration and creativity among peers. For the past decade, academic researchers and linguistic authorities have engaged in a discourse regarding the pedagogy of English as a second language and the implications of technological advancements. In light of advancements in educational curricula and technology, English language educators in secondary schools are compelled to update

their pedagogical approaches. The advent of social media has created numerous opportunities for the instruction and acquisition of English as a second language. Owing to concerns regarding discipline and constraints in funding, the utilisation of social media is not prevalent within the educational framework of South Africa. Social media has the potential to cater to a variety of psychological profiles, possibly enhancing engagement among students who struggle academically [4]. Social networking serves as a valuable tool for personalised educational experiences. In a culture characterised by active participation, social media serves as a conduit for the unification of diverse cultures through collaborative authorship and the facilitation of digitally enabled, interconnected knowledge networks [5].

It is evident that students learning English as a foreign language continue to encounter challenges in speaking, regardless of the frequency with which they engage with the language. Numerous studies indicate that the utilisation of oral language within educational settings has been significantly overlooked, with educators frequently employing oral language more than their students do. Nonetheless, even in the hands of the educator, oral language seldom functions as a medium through which students acquire new knowledge and engage with diverse perspectives [6]. One of the fundamental challenges arises when students endeavour to articulate themselves in a foreign language during class, yet find themselves grappling with shyness. They exhibit considerable concern regarding the potential for errors, driven by a fear of judgement or the perception of foolishness. They experience a sense of discomfort regarding the focus their speech attracts. In a foreign language class, the emergence of fear and inhibitions can occur quite readily. In order for students to adeptly navigate these emerging responsibilities, it is imperative that education equips them with the essential tools and skills. Consequently, the incorporation of technology as an intrinsic objective within the educational framework has transcended mere luxury; it has become an essential necessity [8]. The integration of online tools for the acquisition of a second language is expected to emerge as an inevitable consequence of the evolving landscape of the educational community, driven by increasing reliance on technology and the necessity for digital competencies. Research indicates that individuals engaging in online study exhibit superior results regarding anxiety levels and the necessity to recognise deficiencies in their language proficiency compared to those participating in conventional classroom settings for second language acquisition [9]. Research has shown that the integration of technology in language education significantly enhances students' proficiency in vocabulary, grammar, writing, reading, pronunciation, speaking, and listening skills.

There has been a recent uptick in the use of social networking services (SNS)—whose principal role is to facilitate connections between users—in the setting of English as a foreign language (EFL) classrooms and beyond. The ability to connect and share a wide range of content—blogs, podcasts, newsletters, videos, and more—on social media platforms makes them a viable option for networking. The most popular social media platforms, in terms of user base, are YouTube, Facebook, WhatsApp, Twitter, and Instagram. In respect to the central concern expressed by this research, it is critical to keep in mind that fluency in any language is relevantly important since it serves the function of communication; after all, everyone uses language speech to share ideas and information, and English language speech is the most valuable of all. Due to the emphasis on grammar and principles in English instruction, students are always striving to improve their spoken English skills. Hence, public speaking skills are downplayed. Staying up with the times has necessitated the use of new technology to enhance EFL learners' speaking abilities. Using social media and English as a common language, they communicate with individuals from all over the globe [11].

The following section 2 reviews the existing study. In section 3 the methodology of the study is briefly explained. Section 4 discusses the findings of the study. The study is concluded in Section 5.

Related Works

Because of the COVID-19 pandemic, our school system has changed drastically. Because of this, the lesson plans have shifted from in-person to online learning. The use of both synchronous and asynchronous network applications is crucial in online learning. Professors' preference for online tasking over establishing a productive learning environment contributed to the criticism that web-based learning was tedious, in addition to the technical challenges. Using Google Meet (GM), the researcher conducted Classroom Action Research (CAR) to boost students' interest in learning English while they completed online assignments. Their level of motivation rose by 61.8 percent. This

result showed that the students were paying attention and were an integral part of the learning process. Because of the GM app, the students were excited to speak up, provide answers to specific questions, and discuss the meeting's topic. A student's capacity to correctly compose phrases relevant to the tasks assigned to them was also affected by the increase in inspiration they felt. Based on the study's results, the researcher says that using GM in online classes could change students' minds about how much they want to study English [12].

Because of the COVID-19 pandemic, most educational pursuits are now conducted online. Since this is the case, the educator has more leeway to choose a legitimate and effective strategy for teaching the subject, especially in English. The students' already-limited command of the English language is impacted. The methods that students use to learn English online were the focus of the study. This type of research is qualitative since it uses a case study design. In all, 59 pupils made up the study's sample. There are two main instruments employed in this study: an observation checklist and interview guidelines. Students appear to make use of four distinct approaches to language learning when they study English: compensatory, cognitive, social, and metacognitive. The application of language learning approaches in online English learning must be followed by the utilisation of the English teacher's talents in instructing students. So, as students study English online, teachers should be there to help and encourage them. Online language learners would do well to make use of high-quality instructional materials and software. Various strategies were employed, such as social, metacognitive, compensatory, and cognitive approaches. While taking an online English class, students used a language framework to make educated guesses based on text and images, collaborated with classmates, and ultimately, took an exam [13].

Over the years, technology has been increasingly important in various aspects of language acquisition. Among college students, WhatsApp is quickly becoming the most popular social networking site for learning a new language. Finding out whether college students think WhatsApp is a good way to help them learn a new language is the main purpose of the study. The suggested study also makes note of pupils' frequent WhatsApp use. Based on the results of the poll, students believe that WhatsApp might be a valuable tool for online language learning for them. The educational conclusion of the study emphasises the usefulness and possible significance of WhatsApp in improving college students' ability to acquire new languages. Students should see an increase in their competence, understanding, knowledge, outlook on lifelong learning, and practical abilities. Keeping that in mind, educators can design lessons around WhatsApp's dual use as a study tool and a social media network. With an emphasis on WhatsApp's educational characteristics rather than its other general purposes, this can be done in an organised manner by informing students about the goals and learning objectives of their assignments. cited as [14].

Nowadays, people communicate, share ideas, and interact with one another using web-based media. If the more academic staff could figure out how to include online informal organisations into their curricula, Paul [15] said they may be considered as a welcoming instructional innovation. Systems management websites should create portfolios for academic activities, and students should only be given access to social media for educational purposes, according to Shravan [16]. The benefits of using web-based media for training, according to Aruna Roy [17], should prompt the creation of natural exercises. Online media aid students and raise their academic evaluation foci, according to Rahul Verma [18]. Online media are highly suggested for instructional purposes by Mingle and Adams [19]. However, it is important to make a proper observation by warning students about the risks of web-based media, as they may become overly reliant on it. When it comes to education, Butler and Teja [20] confirmed that online media brings people together and helps them develop learning plans. In order to understand how understudies think about using social media for learning, Aman and Rehan [21] used a contextual analysis. According to both sources, students utilise social media to do research, share knowledge, and even try to solve problems; furthermore, students are required to complete a variety of activities and assignments on these platforms in order to improve their learning. The majority of the academic communities in India, according to Syed Idris and Ravi Kumar [22], have wholeheartedly embraced the academic merits and benefits of using online media as a tool for ESL instruction, but they have also stipulated certain requirements for their implementation. Mao [23] investigated the mentalities, beliefs, and affordances of secondary school pupils with regard to web-based media. The majority of students rely on online media to engage with society and have

fun, according to the report. Inspiringly, the students shared their thoughts on how to use online media in training to improve their own learning.

Methodology

It was essentially descriptive research. Examining and quantifying the impact of online media on undergraduates' English language acquisition was the primary goal. Additionally, a well-designed online questionnaire was created to gather data from the participants. A variety of college-bound students participated in the online survey.

Materials and Methods

While it's obvious that college students love social media, the question of whether or not these sites actually help them do better in class remains open. Perhaps this is true because Facebook exemplifies cutting-edge technology that is primarily intended for social interaction and other purposes rather than language training and learning. Therefore, in order to lay the groundwork for the creation of new learning and teaching activities, an extensive and comprehensive integration approach is necessary.

This study uses Facebook to examine the effects of four interventions on students' attitudes towards English language learning: competence, language improvement, ambition, and attitude. This research aims to fill a gap in our understanding of the challenges associated with using Facebook as an online classroom for ESL students. These four research questions were its primary focus:

1. Does Facebook's use as an online learning environment help college students learn English?
2. What do students think of Facebook as a platform for online English language instruction?
3. What do students think about Facebook's general usability in a classroom setting?
4. What do users think about Facebook's value for participating in particular language learning activities?

Sample Size

The investigation covers 274 undergraduate students of various colleges of Delhi University India, who study English as a second language. The population of this study is formed by 56% boys and 44% girls, who are from 22 different undergraduate colleges students.

Participants

The primary research institution in Delhi University was the site of this inquiry. The Ministry of Higher Education (MOHE) designated DU as the APEX (Accelerated Program for Excellence) Institution in 2018 to establish a top-tier Indian university that will rank among the top 100 universities in the world. Most Delhi University students specialise in science and study science courses in subjects including biology, engineering, physics, pharmacy, chemistry, medicine, and manufacturing technology. It could be beneficial to find the main concerns which are of relevance to the learner's utilizing FB for English language learning by performing a qualitative survey study that examines the learners practicing or activities of FB and their perceptions on FB as an online learning setting. For this reason, convenience sampling was employed to pick 300 undergraduate students from Delhi University at random to take part in the survey. The individuals were chosen because of the researchers' ability to access the students readily. The survey was given to students who entered the university's central library and had been swiftly returned after completion. An overall of 100 questions gathered have been gathered for every one of the three days these activities were carried out.

Data Collection

For this survey, the investigators took the help of Google Forms. They shared the link of the Google Form with various teachers of undergraduate colleges. The teachers sent the same to their students along with a request to fill the forms through WhatsApp. The data of this investigation were inquired using the software called Statistical Package for the Social Sciences (SPSS). The results were used accordingly to expound the outcomes, and consequently, propositions were drawn.

Data Analysis and Instruments

The survey employed two sections of a questionnaire as its instrument. The demographic data and language preferences of the pupils were collected. The two demographic details collected were the gender and language proficiency of the students. The student's engagement with Facebook and a framework associated with teaching English within a Facebook context are also explored. This structure was designed with a higher Cronbach alpha score of 0.977, based on previous reviews that examined activities and experiences through the use of computer-mediated communication (CMC)

and ICT tools for language instruction and learning. The framework employed a 5-level Likert scale ranging from "Strongly disagree" to "Strongly agree." The elements of the framework for acquiring English within a social media environment were derived from a significant focus on enhancing students' language skills alongside their motivation, confidence, and perspectives towards learning English. The items of the construct were subsequently refined based on the observations and experiences of regular Facebook users.

Demographic data has been analysed using frequency and percentages, while mean values, frequencies, and percentages were employed to describe the items of the construct and the students' views on Facebook as a platform for English language learning. The responses from the learners to the open-ended questions have been systematically categorised into distinct patterns and themes, followed by an analysis employing scenario and activities tagging methodologies. Situation codes are applied to digital data, illustrating how the learner described and assessed the utilisation of Facebook for acquiring the English language. The scenario indicators were employed to delineate the conditions under which students would deem it important to learn English via Facebook. The activity codes were then assigned to data elements that reflected the students' habitual behaviours, including writing (such as posting messages) and reading, which occurred as a consequence of their activities on Facebook. The quantitative research received support and context from the qualitative data, with each student's excerpts systematically analysed and presented through the use of codes. The participants' responses were documented verbatim, reflecting the exact language used by the students, accompanied by their respective codes. The richness of the qualitative data indicates that some excerpts might reference or address multiple issues, and at times, the concepts within an extract may be interconnected. This information is presented to the audience.

Findings and Discussion

The results illustrate the students' comprehensive performance on Facebook, addressing the question of whether this online platform serves as an effective learning environment for college students studying English. Ultimately, it examines the perspectives of students regarding Facebook as a medium for online English learning.

A significant majority of students with Facebook accounts (84.61%) reported that they registered for the platform over two years ago. A mere 15.38% of the participants reported being active Facebook users for an entire year. The responses of participants are presented in Table 1, categorised by the duration of their membership on FB.

Table 1: Duration of Membership on Facebook

Years				Overall
	Year 1	Year 2	Year 3	
Frequency	8	15	34	60
Percent	15.30%	25.70%	55.12%	100%

Table 2 below lists the frequency with which EFL students accessed their Facebook profiles.

Table 2: Regularity of Facebook logins

	Monthly	Weekly	Daily
Frequency	50	12	5
Percent	72.12%	18%	6.20%

It demonstrates that most EFL students became engaged Facebook users. 48 students (73.84%) were found to have checked onto their Facebook accounts 1-3 times each day, 13 students (20%) to have done so 1-3 times per week, and 4 students (6.15%) to have done so 1-3 a month on average. Figure 1 shows the graphical representation of students' activity on Facebook.

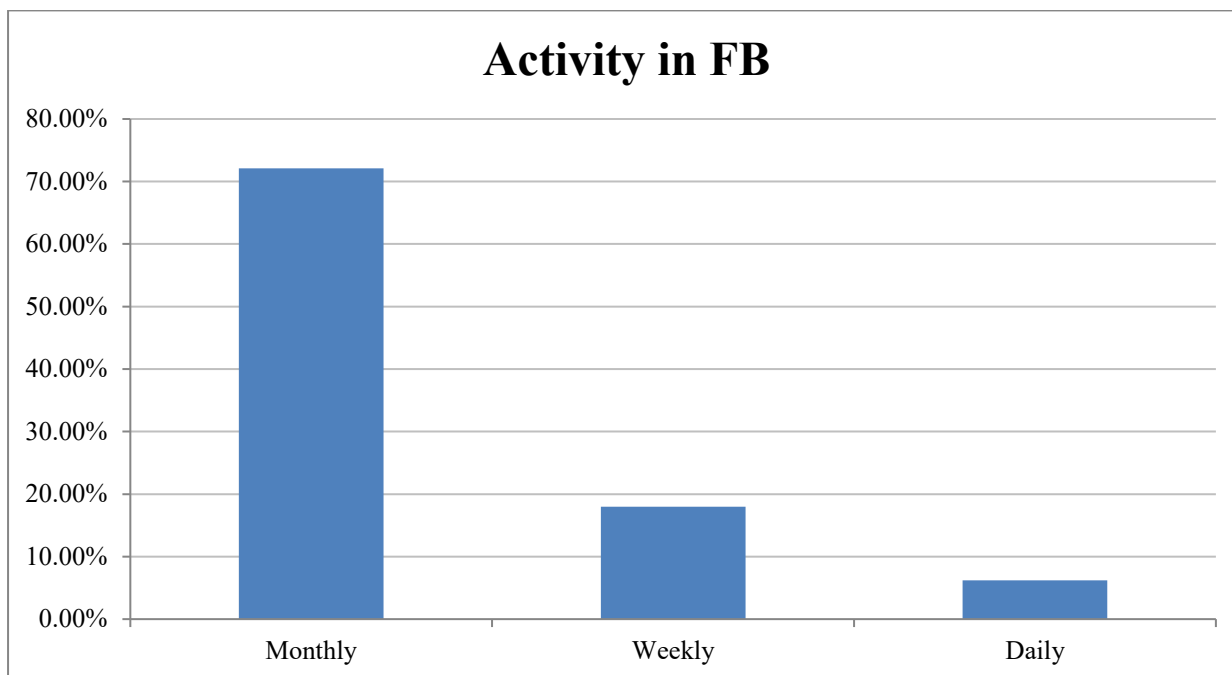


Figure 1: Student's access to Facebook

The answers to the issue of whether using Facebook as an online learning environment makes it easier to learn English are shown in Table 3.

Table 3: Facebook's Perception of Language Improvement

Characteristics	Strongly Disagree	Disagree	Slightly Agree	Agree	Average
I use Facebook to practice my English writing.	3.10	9.12	25.12	50.22	3.50
I use Facebook to practice reading in English.	3.04	3.21	20.22	40.14	3.24
Facebook boosts my confidence in my English writing.	1.53	10.02	24.18	42.04	3.62
Facebook helps me learn new words in English.	3.02	0	36.32	35.89	4.12

Data from the respondents' opinions on how using Facebook boosts their confidence in studying English are shown in Table 4.

Table 4: Improving students' self-esteem using Facebook

Characteristics	Strongly Disagree	Disagree	Slightly Agree	Agree	Average
Facebook helps me gain confidence to write in English.	3.15	10.21	16.23	42.10	3.62
Facebook gives me more confidence to read English.	3.15	11.29	16.23	45.21	3.64
Facebook boosts my confidence in my English communication skills.	0	9.45	18	55.49	3.66

The study's conclusions showed that EFL students typically had a favorable opinion of Facebook as a setting for studying English digitally. With a mean score of 3.80, the majority of the EFL students concurred that they have a favorable attitude toward learning EFL using Facebook. Conversely, 80% of EFL students had favorable opinions of English. The majority of EFL students thought Facebook motivated them to study English more frequently.

The fact that Facebook has become a well-liked setting for language study could be one explanation for the positive attitudes EFL students have regarding learning EFL using social media. Facebook is

regarded as one of the most popular internet-based platforms for interpersonal connection and communication. Social networking sites gave users several options to share information, start conversations, and even generate interesting material. It demonstrates that individuals try to take advantage of every chance to further their education.

By influencing students' attitudes and fostering a sense of independence, Facebook can boost motivation and improve students' achievement. Typically, technology does have the demonstrated ability to increase second language learners' desire to learn, and information technology could indeed assist second language acquisition, enhance their language skills, influence their learning attitude, and develop their self-instruction techniques and personality. Regarding examining Facebook as an online English language-learning environment and students' impressions of this learning model, the results of this research are likewise consistent with those published by earlier studies.

Conclusion

At present, students frequently engage with social networking platforms such as Facebook, believing that the internet enhances their communication and collaboration skills within the classroom environment. This study aims to provide a comprehensive overview of the investigation into Facebook as a platform for online English language learning, exploring whether this instructional method can improve students' English proficiency. Following four interventions focused on language development, confidence, inspiration, and passion, the study also seeks to explore students' perceptions of learning English through Facebook. Findings indicate that EFL students perceive Facebook as a digital learning space that enhances, nurtures, and aids their English language development. The findings indicate that learners' confidence in studying the English language increased due to the use of Facebook. The findings indicated that students endorsed this particular instructional method. Based on the study's findings, it is recommended that TEFL educators develop educational initiatives utilising social networking platforms such as Facebook as instructional resources.

References

1. M. Farahian and F. Parhamnia, "Knowledge sharing through WhatsApp: does it promote EFL teachers' reflective practice?," *J. Appl. Res. High. Educ.*, 2021.
2. Yadava, A. K., Khan, I. A., Pandey, P., Aarif, M., Khanna, G., & Garg, S. (2022). Impact of marketing communication and information sharing on the productivity of India's small and medium-sized businesses (SMEs). *International journal of health sciences*, 6, 12745-12755.
3. H. Slim and M. Hafedh, "Social media impact on language learning for specific purposes: A study in English for business administration," *Teach. Engl. Technol.*, vol. 19, no. 1, pp. 56–71, 2019.
4. Fatma, G., Begum, M. S., Tariq, M. S., Chauhan, M. S., & Kheri, M. N. A. (2022). Realistic Treatment of War in the Novels of Stephen Crane and Ernest Hemingway.
5. M. Altuwairiqi, N. Jiang, and R. Ali, "Problematic attachment to social media: five behavioural archetypes," *Int. J. Environ. Res. Public Health*, vol. 16, no. 12, p. 2136, 2019.
6. C. Rwodzi, L. De Jager, and N. Mporfu, "The innovative use of social media for teaching English as a second language," *J. Transdiscipl. Res. South. Afr.*, vol. 16, Feb. 2020, doi: 10.4102/td.v16i1.702.
7. A. Kaharuddin, "The communicative grammar translation method: a practical method to teach communication skills of English," *ETERNAL Engl. Teach. Learn. Res. J.*, vol. 4, no. 2, pp. 232–254, 2018.
8. A. A. Aziz and S. Kashinathan, "ESL Learners' Challenges in Speaking English in Malaysian Classroom," *Development*, vol. 10, no. 2, pp. 983–991, 2021.
9. P. S.-C. Goh and N. Abdul-Wahab, "Paradigms to drive higher education 4.0," *Int. J. Learn. Teach. Educ. Res.*, vol. 19, no. 1, pp. 159–171, 2020.
10. M. González-Lloret, "Collaborative tasks for online language teaching," *Foreign Lang. Ann.*, vol. 53, no. 2, pp. 260–269, 2020.
11. R. Fithriani, U. Dewi, S. H. Daulay, M. Salmiah, and W. Fransiska, "Using Facebook in EFL writing class: Its effectiveness from students' perspective," *KnE Soc. Sci.*, pp. 634–645, 2019.
12. E. Namaziandost and M. Nasri, "The Impact of Social Media on EFL Learners' Speaking Skill: A Survey Study Involving EFL Teachers and Students," Jan. 2019.

13. R. W. P. Putra, "Improving the students' motivation in learning English through Google Meet during the online learning," *Engl. Learn. Innov.*, vol. 2, no. 1, pp. 35–42, 2021.
14. Sharma, N., Yadava, A. K., Aarif, M., Anandaram, H., Alalmal, A., & Singh, C. (2022). Business Opportunities And Challenges For Women In The Travel And Tourism Industry During Pandemics Covid-19. *Journal of Positive School Psychology*, 897-903.
15. P. A. H. Sugiarta, P. Supatra, and I. Hadisaputra, "Language learning strategies used by the students in learning English through online," *J. Pendidik. Bhs. Ingg. Undiksha*, vol. 9, no. 2, pp. 156–163, 2021.
16. S. M. Alqahtani, C. V. Bhaskar, K. Vadakalur Elumalai, M. Abumelha, and others, "WhatsApp: An online platform for university-level English language education," *Arab World Engl. J. AWEJ Vol.*, vol. 9, 2018.
17. Principal, S. H. M., Mishra, A., Sharma, J. K., Aarif, M., & Arwab, M. SMART AND INNOVATIVE IDEAS TO PROMOTE TOURISM FOR GLOBAL TRADE AND ECONOMIC GROWTH.
18. Al-Shourbaji, I., & Duraibi, S. (2023). IWQP4Net: An Efficient Convolution Neural Network for Irrigation Water Quality Prediction. *Water*, 15(9), 1657.
19. Alijoyo, F. A., Prabha, B., Aarif, M., Fatma, G., & Rao, V. S. (2024, July). Blockchain-Based Secure Data Sharing Algorithms for Cognitive Decision Management. In *2024 International Conference on Electrical, Computer and Energy Technologies (ICECET)* (pp. 1-6). IEEE.
20. Ramachandran, R., & Sujathamalini, J. (2024). Promoting Diversity And Inclusion In Higher Education: Strategies And Best Practices. *Educational Administration: Theory and Practice*, 30(4), 6997-7007.
21. Alim, S., & AlShourbaji, I. (2020). Professional uses of Facebook amongst university students in relation to searching for jobs: an exploration of activities and behaviours. *International Journal of Social Media and Interactive Learning Environments*, 6(3), 200-229.
22. F. A. Alijoyo, B. Prabha, M. Aarif, G. Fatma, V. S. Rao and P. Valavan M, "Blockchain-Based Secure Data Sharing Algorithms for Cognitive Decision Management," 2024 International Conference on Electrical, Computer and Energy Technologies (ICECET, Sydney, Australia, 2024, pp. 1-6, doi: 10.1109/ICECET61485.2024.10698611.
23. Al-Shourbaji, I., Alhameed, M., Katrawi, A., Jeribi, F., & Alim, S. (2022). A Comparative Study for Predicting Burned Areas of a Forest Fire Using Soft Computing Techniques. In *ICDSMLA 2020: Proceedings of the 2nd International Conference on Data Science, Machine Learning and Applications* (pp. 249-260). Springer Singapore.
24. Kalpurniya, S., Ramachandran, R., & Chandramohan, N. (2023). A Study on Stress Level, Happiness, Challenges, and Emotional Bonds of Parents having Children with Disabilities Availing Services at
25. NIEPMD, Chennai. *Integrated Journal for Research in Arts and Humanities*, 3(5), 72-88.
26. AlShourbaji, I., Helian, N., Sun, Y., & Alhameed, M. (2021). Anovel HEOMGA approach for class imbalance problem in the application of customer churn prediction. *SN Computer Science*, 2, 1-12.
27. Band, S. S., Ardabili, S., Danesh, A. S., Mansor, Z., AlShourbaji, I., & Mosavi, A. (2022). Colonial competitive evolutionary Rao algorithm for optimal engineering design. *Alexandria Engineering Journal*, 61(12), 11537-11563.
28. Singh, A., & Ramachandran, R. (2014). Study on the effectiveness of smart board technology in improving the psychological processes of students with learning disability. *Sai Om Journal of Arts & Education*, 1(4), 1-6.
29. Kachare, P., Puri, D., Sangle, S. B., Al-Shourbaji, I., Jabbari, A., Kirner, R., ... & Abualigah, L. (2024). LCADNet: a novel light CNN architecture for EEG-based Alzheimer disease detection. *Physical and Engineering Sciences in Medicine*, 1-14.
30. Shiju, K. K., Breja, M., Mohanty, N., Ramachandran, R., & Patra, I. (2023). Importance of Special Education and Early Childhood General Education Teachers' Attitudes toward Culturally Linguistically Diverse People. *Journal for ReAttach Therapy and Developmental Diversities*, 6(9s (2)), 1544-1549.

31. **Kachare, P. H., Sangle, S. B., Puri, D. V., Khubrani, M. M., & Al-Shourbaji, I. (2024). STEADYNet: Spatiotemporal EEG analysis for dementia detection using convolutional neural network. *Cognitive Neurodynamics*, 1-14.**
32. Ramachandran, R., & Singh, A. (2014). The Effect of Hindustani Classical Instrumental Music Santoor in improving writing skills of students with Learning Disability. *International Journal of Humanities and Social Science Invention*, 3(6), 55-60.
33. Puri, D. V., Kachare, P. H., Sangle, S. B., Kirner, R., Jabbari, A., Al-Shourbaji, I., ... & Alameen, A. (2024). LEADNet: Detection of Alzheimer's Disease using Spatiotemporal EEG Analysis and Low-Complexity CNN. *IEEE Access*
34. Sudarsanan, S., Ramkumar Thirumal, H. D. K., Shaikh, S., & Ramachandran, R. (2023). Identifying the Scope of Reattach Therapy for Social Rehabilitation for Children with Autism. *Journal for ReAttach Therapy and Developmental Diversities*, 6(10s), 681-686.