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REVOLUTIONIZING ENGLISH FOR ACADEMIC AND OCCUPATIONAL PURPOSES IN NORTHEAST INDIA AS A CATALYST FOR SOCIO-CULTURAL EMPOWERMENT AND LINGUISTIC MASTERY

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Abstract: In an increasingly globalized world, proficiency in English is essential for academic success and professional advancement. However, learners often struggle to transition between English for Academic Purposes (EAP), which emphasizes formal discourse and research communication, and English for Occupational Purposes (EOP), which prioritizes practical communication skills. This gap is particularly pronounced in linguistically diverse and socio-culturally distinct environments, where language acquisition is influenced by access to resources, pedagogical approaches, and cultural norms. The primary objectives of this study are to investigate the socio-cultural and linguistic factors shaping EAP and EOP learning, identify pedagogical gaps, and propose inclusive strategies for a smoother transition between academic and professional English. A mixed-method approach was employed, involving structured surveys, semi-structured interviews, and case studies among 50 students (25 rural, 25 urban) from high school to postgraduate levels. Quantitative analysis revealed that learners with greater exposure to English resources exhibited higher cultural confidence and proficiency, while those with limited access faced significant barriers. Gender-based variations were also observed, with female learners reporting higher anxiety and access constraints. T-tests showed no significant difference in overall proficiency between EAP and EOP learners ($p=0.6816$), but EAP learners struggled more with idiomatic expressions, whereas EOP learners benefited from role-playing and community support. Regression analysis indicated that technology-based learning was the most effective strategy, though accessibility issues affected its impact. The study concludes that culturally responsive pedagogical strategies integrating digital tools, contextualized curricula, and enhanced language exposure are critical for improving English proficiency and ensuring a seamless transition between academic and professional domains.

Index Terms - English for Academic Purposes (EAP); English for Occupational Purposes (EOP); Linguistic Adaptation; Socio-Cultural Barriers; Pedagogical Strategies.

I. INTRODUCTION

In an era of globalization and digital interconnectedness, English has solidified its role as the primary medium of academic discourse, professional communication, and cross-cultural engagement. It facilitates international trade, academic research, diplomacy, and multinational collaborations, making proficiency in English an essential skill for global participation. As a result, two specialized fields—English for Academic Purposes (EAP) and English for Occupational Purposes (EOP)—have emerged to equip learners with the necessary linguistic and cognitive competencies to succeed in academic and professional settings. While EAP focuses on academic writing, critical thinking, and research communication, helping learners navigate formal discourse conventions and scholarly discussions, EOP emphasizes practical communication skills such as professional reporting, negotiations, and intercultural competence, ensuring effective participation in real-world occupational contexts (Kachru, 1996; Canagarajah, 1999). However, for learners in linguistically diverse and socio-culturally distinct environments, such as Northeast India, transitioning between these two domains presents significant challenges due to context-specific barriers that hinder language acquisition.

Language acquisition is not solely a linguistic process; it is shaped by an intricate interplay of sociocultural, cognitive, and contextual factors. Vygotsky's (1978) Sociocultural Theory (SCT) posits that learning occurs through social interaction within the Zone of Proximal Development (ZPD), where guidance from knowledgeable peers facilitates language internalization (Lantolf & Thorne, 2006). Supporting this, Anton (1999) demonstrated that peer interactions significantly enhance syntactic and lexical acquisition, while Warschauer (2000) highlighted the role of digital communication in fostering intercultural competence. From a cognitive perspective, Second Language Acquisition (SLA) theories further elaborate on how language learning occurs. Krashen's (1985) Input Hypothesis argues that learners acquire language most effectively when exposed to comprehensible input slightly above their current proficiency level, whereas Swain's (1985) Output Hypothesis emphasizes that producing language actively helps learners identify gaps in their knowledge. Empirical evidence from Izumi and Bigelow (2000) confirms that structured output tasks improve grammatical accuracy and retention, reinforcing the importance of cognitive engagement. Additionally, Chomsky's (1986) generative grammar framework supports the notion of an innate language acquisition mechanism, while Cognitive Load Theory (Sweller, 1988) highlights the necessity of structured learning tasks to optimize cognitive processing (Paas & Van Merriënboer, 1994). These theoretical insights have been increasingly integrated into AI-driven learning platforms such as Duolingo and Grammarly, which offer adaptive learning experiences tailored to individual needs (Godwin-Jones, 2015).

Beyond cognitive and social perspectives, socioeconomic and cultural barriers significantly impact language acquisition and proficiency. Gardner and Lambert (1972) linked motivation to language learning success, emphasizing the role of integrative and instrumental motivation in achieving fluency. Moyo (2017) further highlighted how socioeconomic status and exposure to native speakers influence multilingual learning outcomes. Within the English for Specific Purposes (ESP) framework, EAP primarily emphasizes academic proficiency by focusing on syntax and semantics (Nation, 2001; Hyland, 2006), while EOP prioritizes professional communication skills and cross-cultural pragmatics (Hutchinson & Waters, 1987). However, learners often struggle with pragmatic competence, leading to misinterpretations in professional settings. Holmes (1995) identified pragmatic failure, particularly in politeness strategies, as a key challenge in workplace communication. Hofstede's (1980) cultural dimensions framework provides further insight into how cultural factors such as power distance and collectivism shape classroom dynamics and communication styles. Meanwhile, Norton's (1995) identity investment theory argues that learners' motivation is closely tied to their perceived social standing and opportunities. Addressing these barriers, digital tools have emerged as essential facilitators of language acquisition, with virtual reality simulations offering authentic language practice (Cheng & Tsai, 2019) and gamified platforms such as Quizlet and Kahoot enhancing engagement (Deterding et al., 2011). Collectively, these studies underscore the complex interplay between cognitive mechanisms, sociocultural influences, and technological innovations in language learning, necessitating pedagogical approaches that integrate cultural awareness with adaptive learning strategies.

Despite the global significance of English, learners in linguistically diverse and socio-culturally complex environments, such as Northeast India, encounter unique challenges in transitioning between EAP and EOP. The region is characterized by high linguistic diversity, cultural norms that emphasize deference, and infrastructural constraints that limit access to quality English education (Singh, 2020). Geographic isolation, political instability, and frequent natural hazards further exacerbate educational disparities (Das & Dutta, 2017; Bordoloi, 2018). Additionally, traditional teaching methods in the region often fail to incorporate socio-cultural awareness, leaving learners unprepared for the differing rhetorical strategies and communicative styles required for academic and occupational success (Hyland, 2006; Norton, 2000). Despite the growing global reliance on English, research on EAP and EOP has largely focused on urban and nationally integrated contexts, neglecting the realities faced by learners in peripheral and underprivileged regions (Kachru, 1996; Singh, 2020). The transition from academic to professional English remains an underexplored area, particularly in regions where pedagogical approaches do not adequately address the socio-cultural dimensions of language learning. To bridge this research gap, the present study aims to examine the socio-cultural and linguistic factors influencing EAP and EOP learning in Northeast India. Specifically, the study has the following objectives: (1) to investigate how socio-cultural and linguistic elements shape learners' academic and professional English proficiency, (2) to identify pedagogical gaps in EAP and EOP curricula, (3) to assess the specific challenges learners face in transitioning between academic and occupational English, and (4) to propose integrated pedagogical strategies that enhance adaptability and competence in diverse linguistic and socio-cultural contexts.

By addressing these research objectives, this study seeks to contribute to the broader discourse on English language education, advocating for pedagogical innovations that recognize the socio-cultural intricacies of linguistically diverse regions. Given the increasing demand for English proficiency in academic and occupational domains, particularly in a rapidly globalizing world, there is an urgent need for localized and adaptable language learning strategies. Through an interdisciplinary approach combining sociocultural theory, second language acquisition principles, and technological advancements, this study aims to provide a comprehensive framework for revolutionizing English education in Northeast India, ultimately fostering socio-cultural empowerment and linguistic mastery.

II. MATERIALS AND METHODS

2.1 Study Area

The northeastern states of India—comprising Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura—offer a distinct socio-cultural and linguistic landscape, making them an ideal focus for this study. The region is home to over 200 indigenous communities, each with unique languages and cultural practices, resulting in a highly multilingual environment. English is often taught as a second or third language, creating challenges for learners aiming to achieve proficiency for academic or professional purposes (Singh, 2020). Furthermore, the region's topography, characterized by hilly terrain, frequent natural hazards such as landslides and floods, and limited transportation infrastructure, poses logistical challenges to education delivery. Political unrest, ethnic conflicts, and insurgency issues have significantly hampered progress, disrupted the educational environment and limited learners' exposure to English in practical settings (Das & Dutta, 2017), (Bordoloi, 2018). The region's peripheral location, socio-economic backwardness, and the prevalence of tribal self-enclosed communities further compound these challenges, emphasizing the need for tailored pedagogical strategies that address the unique barriers to English language acquisition and application in academic and occupational contexts. The selection of Northeast India as the study area is driven by its peripheral and socio-economically marginalized status within India. The region's educational infrastructure is often underdeveloped, with many schools and colleges lacking basic resources such as libraries, language labs, and qualified educators proficient in English. Tribal populations, which form the majority in many northeastern states, often remain confined to their traditional lifestyles, with limited interaction with the mainstream education system. Cultural norms emphasizing indirectness and deference often conflict with the proactive communication styles valued in academic and professional English. Additionally, the region frequently experiences natural disasters that disrupt education, while political instability and insurgency exacerbate security concerns, further restricting access to education (Hall & Walsh, 2002), (Bordoloi, 2018). These factors highlight the critical need for a focused investigation into the socio-cultural and pedagogical dynamics shaping EAP and EOP learning in this context.

2.2 Sampling Selection

The study's sampling framework focused exclusively on the North-Eastern region of India, recognizing its distinct cultural and linguistic diversity. A total of 50 students from this region participated in the study, equally distributed across rural (25 participants) and urban (25 participants) settings. This stratification ensured the representation of socio-cultural variations across different geographic and socio-economic contexts. The sample included high school (HS), undergraduate (UG), and postgraduate (PG) students aspiring to pursue professional careers, with balanced representation across academic streams such as science, arts, and commerce. Professionals were excluded from the study to maintain focus on learners' perspectives and aspirations.

2.3 Sampling Methodology

The sampling process employed a combination of stratified sampling and purposive random sampling. Stratified sampling ensured that both rural and urban participants were adequately represented, reflecting the unique socio-cultural characteristics of the region. Within each stratum, purposive random sampling was used to select participants from diverse educational levels and academic disciplines. This methodology facilitated a comprehensive analysis of socio-cultural factors influencing English language acquisition across a broad demographic spectrum.

2.4 Data Collection Methods

Primary data collection utilized structured surveys, semi-structured interviews, and case studies. The surveys included a mix of closed-ended and open-ended questions, capturing both quantitative metrics (e.g., proficiency levels) and qualitative narratives (e.g., socio-cultural challenges and recommendations). The structured questionnaire was designed to assess linguistic, social, and cultural barriers, including self-reported proficiency in reading, writing, speaking, and listening; access to language resources; and exposure to English in social and educational contexts. Interviews and case studies provided deeper insights into participants' lived experiences, highlighting the interplay of cultural alignment, social norms, and motivational factors. Given the logistical constraints of conducting in-person data collection during the lingering effects of the COVID-19 pandemic, Google Forms was employed as the primary tool for survey distribution. This digital approach ensured wide geographic reach, particularly to remote rural areas, while maintaining participant convenience and data integrity. The online format also allowed for efficient data organization and analysis.

2.5 Data Analysis Methods

Quantitative data were analyzed using descriptive and inferential statistical techniques. Descriptive methods, such as frequency distributions and measures of central tendency, were employed to summarize participant demographics and proficiency levels. Inferential techniques, including correlation and regression analyses, were used to identify relationships between socio-cultural factors and English proficiency. For instance, Pearson and Spearman correlation coefficients examined variables such as cultural confidence and anxiety, revealing significant relationships that impacted language acquisition. Qualitative data, including responses from interviews and case studies, were analyzed thematically to uncover deeper socio-cultural dynamics. Thematic analysis highlighted challenges such as limited access to English-language resources and socio-cultural stigmas associated with speaking English in formal or public settings. The integration of qualitative and quantitative findings provided a holistic understanding of the socio-cultural factors influencing English acquisition. To enhance interpretability, data were presented using advanced visualization techniques, including bar plots, pie charts, and heatmaps. Bar plots illustrated demographic distributions, while pie charts highlighted proportions, such as the rural-urban participant split. Heatmaps visualized correlations between socio-cultural variables and linguistic outcomes, enabling intuitive interpretation of complex relationships.

III. RESULTS

3.1 Assessing the Respondents' Demographic and Socio-Economic Status

Understanding the demographic and socio-economic characteristics of respondents is crucial in assessing their English language learning experiences. Factors such as age, gender identity, and educational qualifications influence linguistic proficiency and access to academic and occupational opportunities. The dataset provides a diverse representation, allowing for a nuanced exploration of how these variables shape respondents' engagement with English in both academic and professional contexts.

One of the key demographic attributes examined is age distribution, which plays a significant role in determining the stage of English language acquisition. The respondents' ages range from 16 to 30 years, with a mean age of 23.68 years, a median of 25 years, and an interquartile range (IQR) of 19 to 28 years. The bimodal distribution observed in Fig. 1 highlights two dominant clusters: students aged 16–19 years and those aged 26–30 years. The younger group primarily consists of high school students, who are at the initial stages of formal English education, often facing challenges in mastering academic writing and discourse conventions. In contrast, the older group mainly includes postgraduate students, who have had extended exposure to English and are refining their skills for professional and scholarly communication. This age-based variation underscores the multi-tiered nature of English learning, where younger students focus on foundational skills, while older learners enhance their proficiency for career-oriented applications. Complementing the age analysis, the gender distribution of respondents provides insights into inclusivity and representation in English education. As depicted in Fig. 2, the dataset consists of 36% male (18 participants), 36% non-binary (18 participants), and 28% female (14 participants). This near-equal distribution of male and non-binary respondents, alongside a slightly lower representation of female participants, ensures a broad gender spectrum is considered in analyzing linguistic experiences. The inclusion of a substantial proportion of non-binary individuals highlights a progressive sampling approach, enabling the study to explore how gender identity intersects with linguistic and socio-cultural challenges. Gender roles and societal expectations can influence access to English learning resources, motivation, and confidence in academic and occupational communication. By incorporating multiple gender identities, the study provides a more inclusive and holistic understanding of language acquisition dynamics.

In addition to age and gender, educational qualifications play a crucial role in shaping English proficiency and academic preparedness. The respondents are categorized into three educational levels: high school (36%, 18 participants), undergraduate (28%, 14 participants), and postgraduate (36%, 18 participants), as shown in Fig. 3. The comparable representation of high school and postgraduate students allows for an in-depth analysis of English learning across different academic stages. High school students typically struggle with basic linguistic structures, formal writing, and comprehension, while postgraduates have advanced exposure to English, often using it for research, academic discourse, and professional communication. Undergraduate students, though slightly underrepresented, occupy a transitional phase where they refine their English skills for both academic and professional applications. This variation in educational backgrounds facilitates a comprehensive assessment of English learning challenges and progression across different levels of education.

Collectively, these demographic and socio-economic insights provide a well-rounded framework for understanding English language acquisition in Northeast India. The bimodal age distribution emphasizes varied learning needs across different academic levels, while the gender diversity ensures an inclusive exploration of linguistic experiences across multiple identities. The educational qualification distribution further enriches the analysis by highlighting the challenges and opportunities at different learning stages. These findings contribute to a holistic understanding of the socio-cultural and educational factors influencing English proficiency, paving the way for targeted pedagogical strategies that cater to diverse learner profiles.

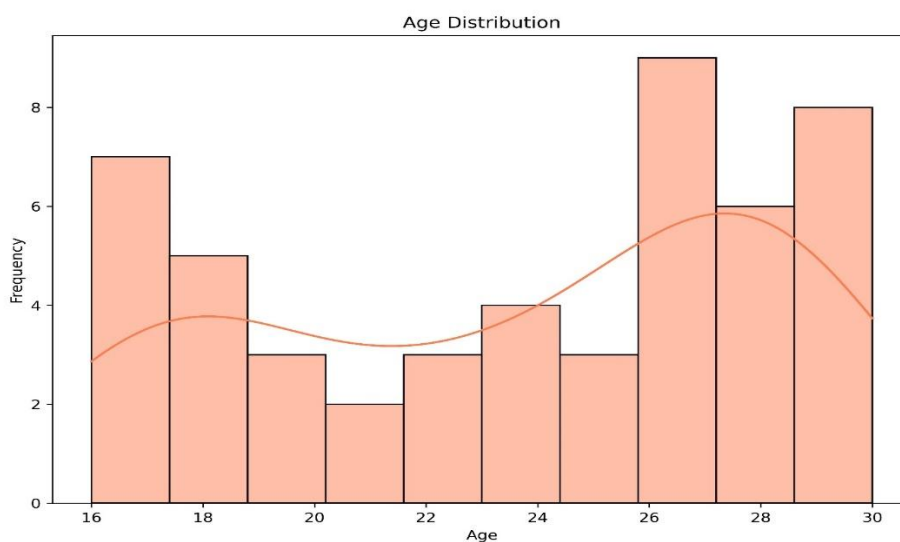


Fig. 1. Bimodal age distribution highlighting the representation of foundational and advanced learners in the North-East region

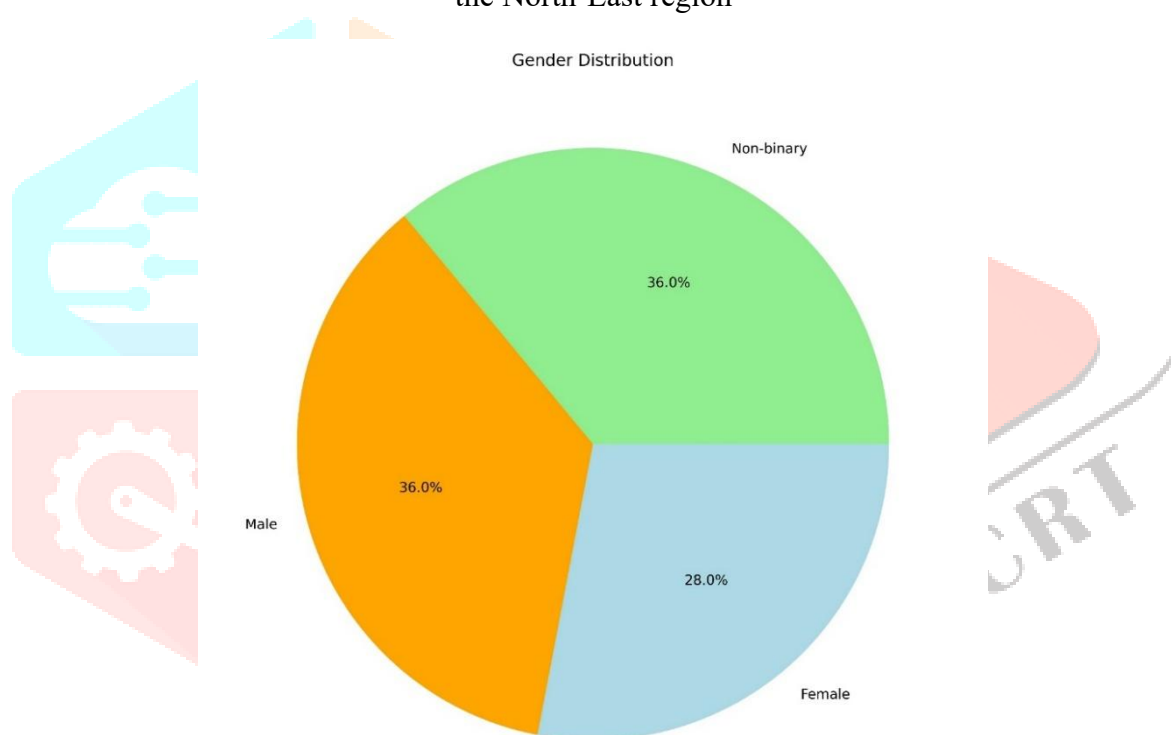


Fig. 2. Inclusive gender distribution showcasing male, female, and non-binary representation in the respondent sample in north eastern region

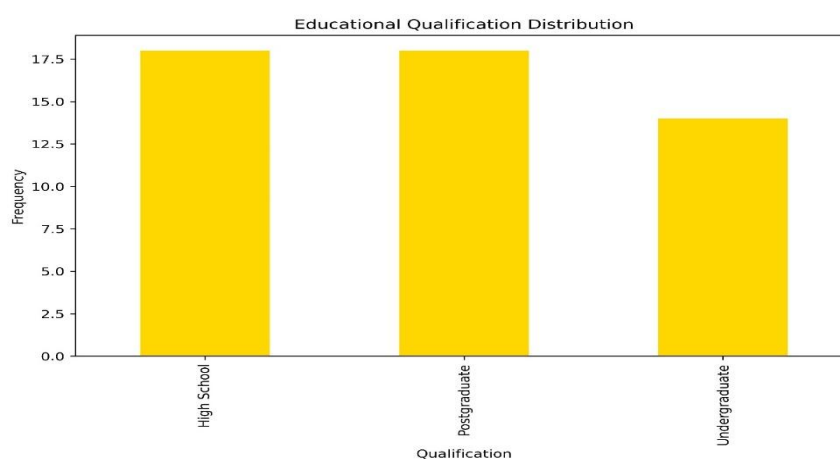


Fig. 3. Balanced representation of high school, undergraduate, and postgraduate educational levels among respondents in north eastern region

3.2 Analysis of Socio-Cultural Linguistic Factors and Demographic Interactions

3.2.1 Socio-Cultural Factor Characterization

The analysis of socio-cultural linguistic factors among respondents from the North-East region highlights important patterns and relationships across various demographic groups. The data sheds light on how elements like cultural confidence, social norms, fear or anxiety, and limited access impact English language learning, with notable differences based on gender and other demographic features. Figure 4 provides valuable insights into the relationships among four key socio-cultural variables: Cultural Confidence, Social Norms, Fear/Anxiety, and Limited Access. The correlations observed are generally weak, indicating that these factors largely function independently in their impact on English language acquisition. A slight positive correlation between Cultural Confidence and Limited Access ($r = 0.15$) suggests that individuals with higher cultural confidence are somewhat more likely to have access to English-speaking environments, highlighting the importance of cultural alignment in facilitating language exposure. Similarly, a weak positive relationship between Fear/Anxiety and Social Norms ($r = 0.16$) indicates that rigid social norms may contribute to heightened anxiety about speaking English, consistent with studies emphasizing the restrictive nature of societal expectations on language use. On the other hand, the negative correlation between Fear/Anxiety and Limited Access ($r = -0.11$) is minimal, showing that these factors do not significantly overlap in shaping learners' experiences. Additionally, the negligible correlation between Social Norms and Limited Access ($r = -0.03$) suggests that these two variables operate independently in influencing English language acquisition.

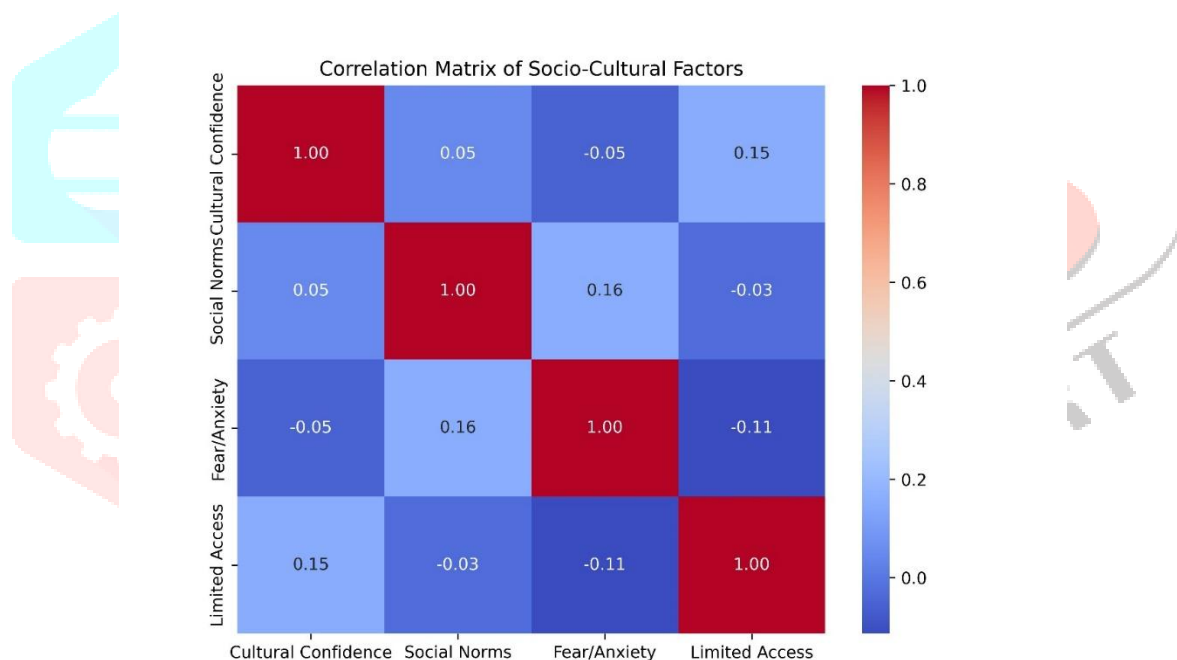


Fig. 4. Correlation matrix illustrating interrelationships among socio-cultural factors influencing English language acquisition in north eastern region

3.2.2 Cultural Confidence by Gender

Figure 5 highlights gender-based differences in Cultural Confidence. Female respondents exhibited the highest median scores for cultural confidence, followed by male and non-binary respondents. The range of responses indicates variability in confidence levels within each group. Median confidence close to 5, reflecting strong alignment with English-speaking norms and environments. Median confidence slightly lower, suggesting moderate cultural alignment. The lowest median score reflects potential socio-cultural challenges faced by this group, possibly related to societal perceptions and limited inclusivity. This pattern highlights the need for targeted interventions to boost cultural confidence among non-binary learners.

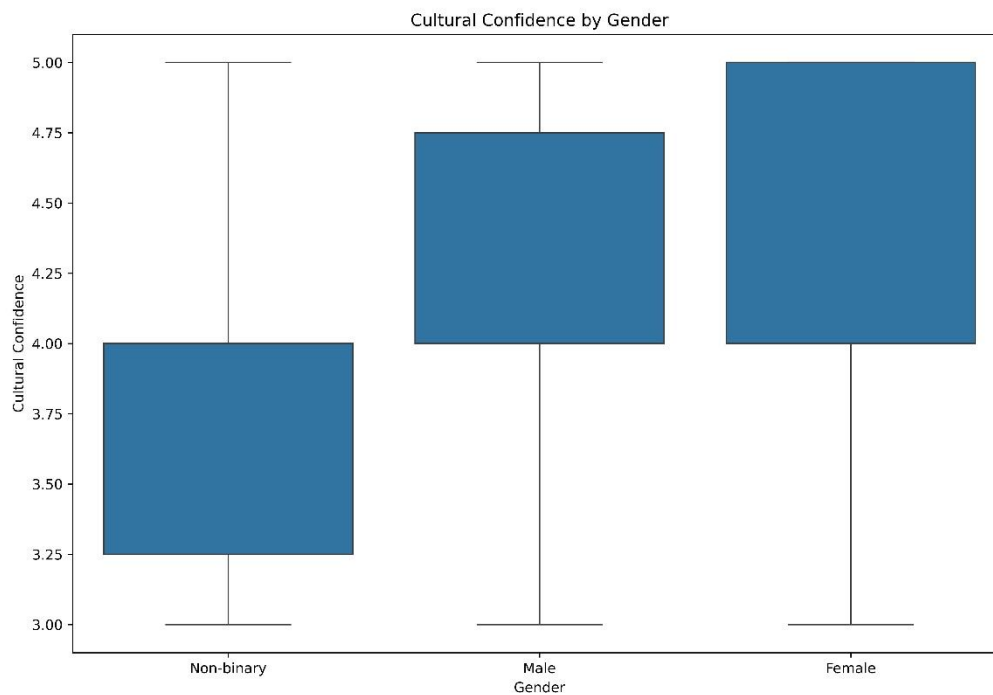


Fig. 5. Cultural confidence levels across gender groups, highlighting disparities in alignment with English-speaking norms in north eastern region

3.2.3 Gender Differences in Socio-Cultural Factors

Figure 6 provides a comparative analysis of socio-cultural factors across gender groups. Female respondents scored the highest (4.5), followed by males (4.1) and non-binary individuals (3.9). This suggests that cultural alignment may be more accurate among females, potentially driven by societal encouragement for linguistic proficiency. Males reported the highest influence of social norms (3.7), suggesting a stronger societal expectation for English usage in this group. Male and non-binary respondents exhibited higher anxiety levels (3.3) compared to females (2.9), indicating that fear of judgment remains a significant barrier for these groups. Females reported slightly greater challenges (2.7) compared to males (2.4) and non-binary respondents (2.5), reflecting potential systemic barriers in accessing English-speaking environments. These findings emphasize the detailed interplay of socio-cultural factors and gender, providing a framework for designing inclusive language acquisition strategies.

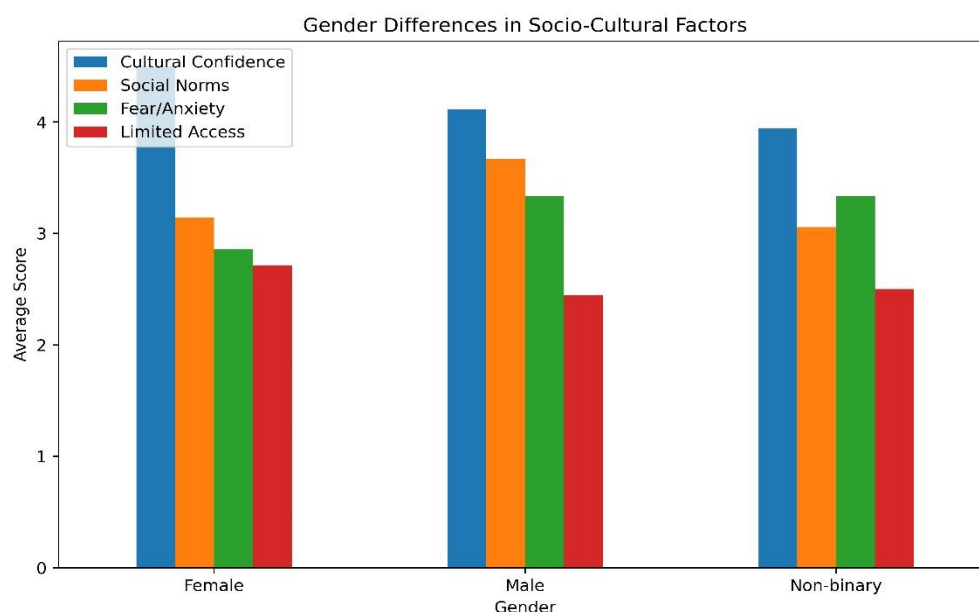


Fig. 6. Gender-based differences in socio-cultural factors affecting English language acquisition in north eastern region

3.2.4 Age vs. Confidence Linked to Socio-Cultural Identity

Figure 7 explores the relationship between age and cultural confidence, segmented by gender and location. For younger Learners (16–19 years), Urban participants exhibited higher confidence scores, reflecting greater exposure to English-speaking environments compared to their rural counterparts. For Older Learners (26–30 years), Confidence levels plateaued across demographic groups, suggesting that socio-cultural barriers become less pronounced with age and experience. The plot highlights the dual impact of demographic factors, such as location and gender, on confidence levels. Urban learners consistently displayed higher scores, emphasizing the role of environmental exposure.

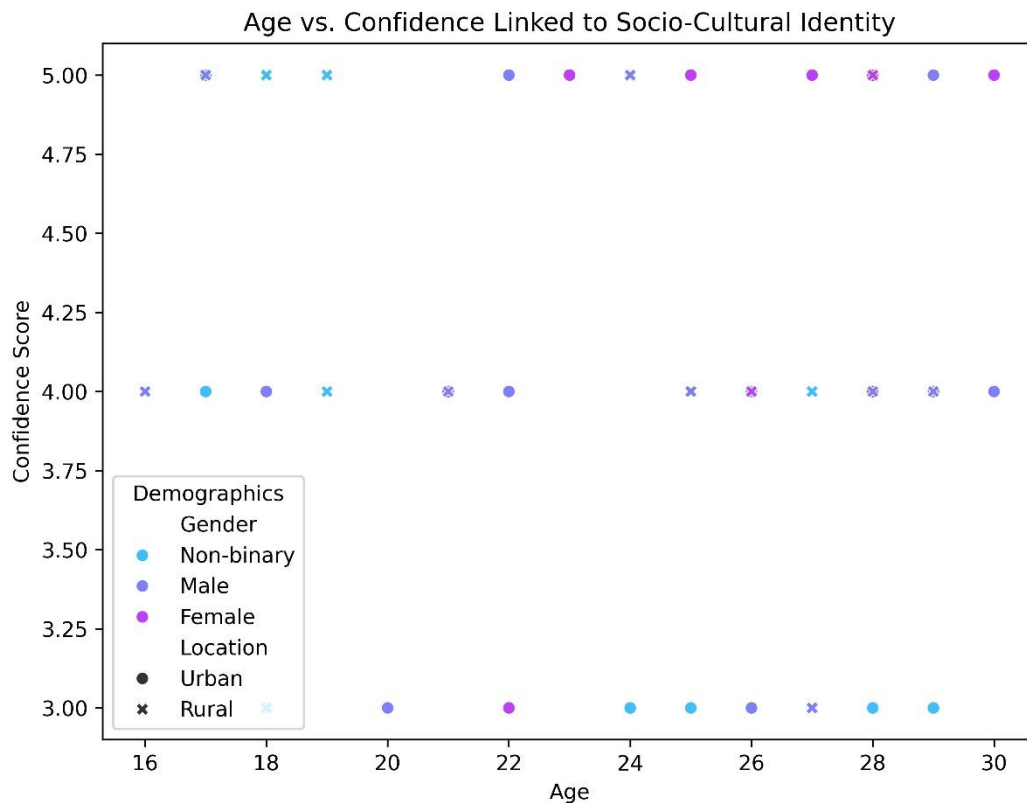


Fig. 7. Age-wise variations in cultural confidence, segmented by gender and location in north eastern region

3.2.5 Pairwise Relationships Among Socio-Cultural Factors

In Fig. 8, the relationships between socio-cultural factors and their distributions is shown. As per Cultural Confidence, a significant clustering near high values (4–5) reflects overall positive alignment with English-speaking norms across the sample. Distributions show a wide spread, indicating variability in how societal pressures and anxiety levels are experienced. Responses cluster around lower values (2–3), stressing systemic barriers and restrictions in accessing English-speaking environments. ANOVA results offer statistical insights into gender-based differences in socio-cultural factors. Cultural Confidence ($p = 0.082$) reveals the result to be marginally significant, suggesting that gender influences confidence levels to some extent. Social Norms ($p = 0.442$) highlights non-significant, indicating no substantial gender differences in societal expectations. For Fear/Anxiety ($p = 0.214$) indicating Non-significant relation, reflecting similar anxiety levels across gender groups.

Limited Access ($p = 0.301$) was also non-significant, suggesting uniform access challenges. While most factors did not exhibit statistically significant differences, the trends observed emphasize the need for gender-specific strategies to address cultural confidence and access barriers.

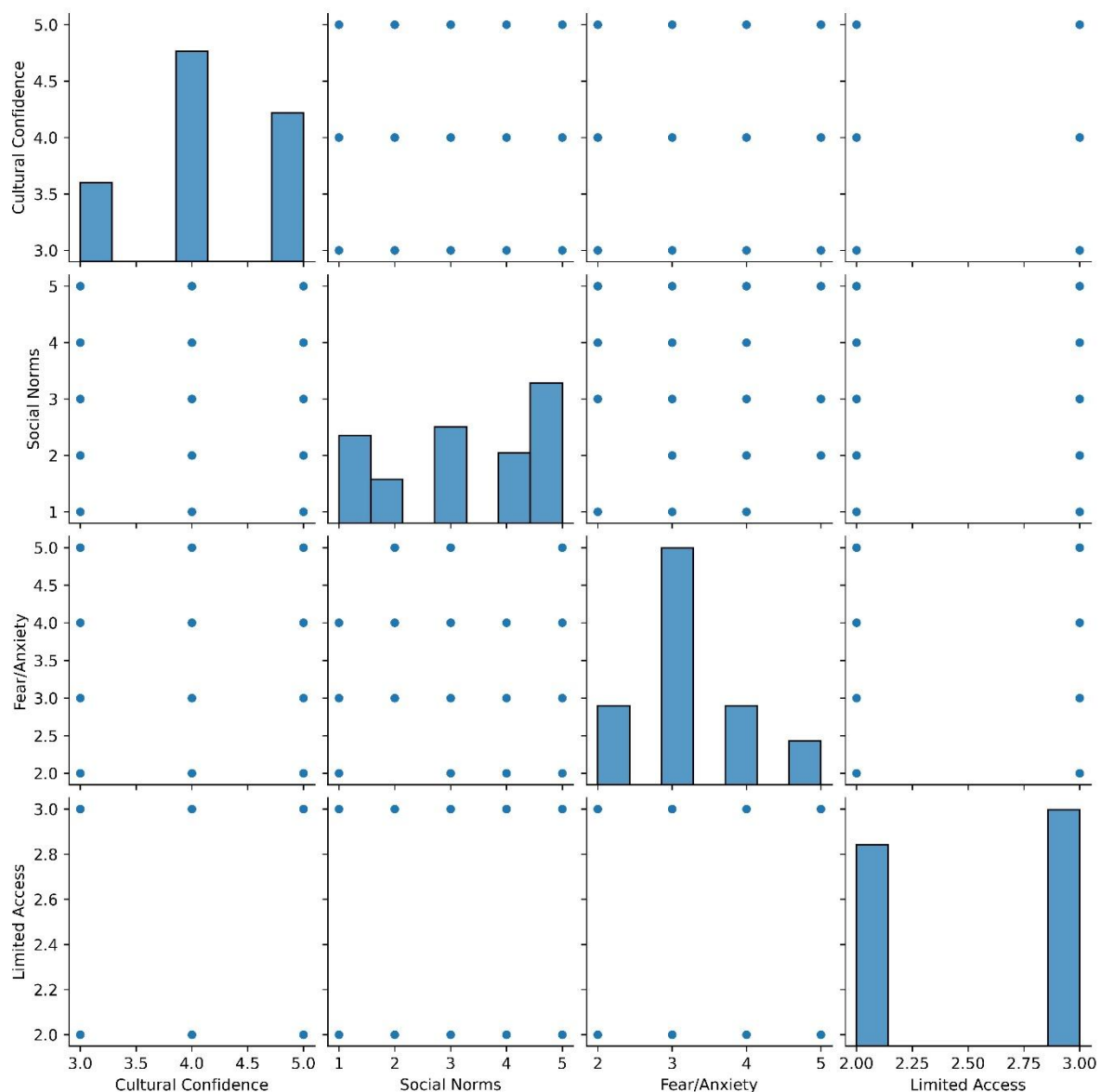


Fig. 8. ANOVA results illustrating the influence of gender on socio-cultural factors in English language acquisition in north eastern region

The analysis of socio-cultural linguistic factors among North-East respondents reveals critical patterns in how cultural confidence, social norms, anxiety, and access influence English language acquisition. Gender-based disparities highlight the importance of targeted interventions to boost cultural confidence and mitigate anxiety, particularly among non-binary learners. The geographic and age-related trends underscore the role of environmental exposure in shaping confidence levels.

3.3 Assessing EAP vs. EOP Challenges

The comparative analysis between EAP and EOP highlights key linguistic and socio-cultural challenges faced by learners at different educational levels and for varying purposes of English language acquisition. This discussion examines the detailed metrics, their implications, and the significant patterns observed in the data.

3.3.1 Challenges by Educational Level

Figure 9 showcasing challenges across educational levels (high school, undergraduate, and postgraduate) provides valuable insights. Both high school and postgraduate learners scored the highest (4.22), indicating significant difficulty in understanding and applying idiomatic expressions. This suggests that learners at foundational and advanced stages may encounter challenges in interpreting culturally nuanced language due to limited contextual exposure. Postgraduates reported the highest difficulty with social norms (3.56), followed by high school learners (3.33). This reflects the tension between traditional socio-cultural expectations and the demands of English communication in academic and occupational settings. Postgraduates again reported the highest scores (3.39), suggesting that despite advanced proficiency, anxiety remains a critical barrier, possibly due to high academic or workplace expectations.

Undergraduate learners reported the lowest proficiency (2.43), reflecting the transitional nature of this stage, where linguistic skills are still being developed.

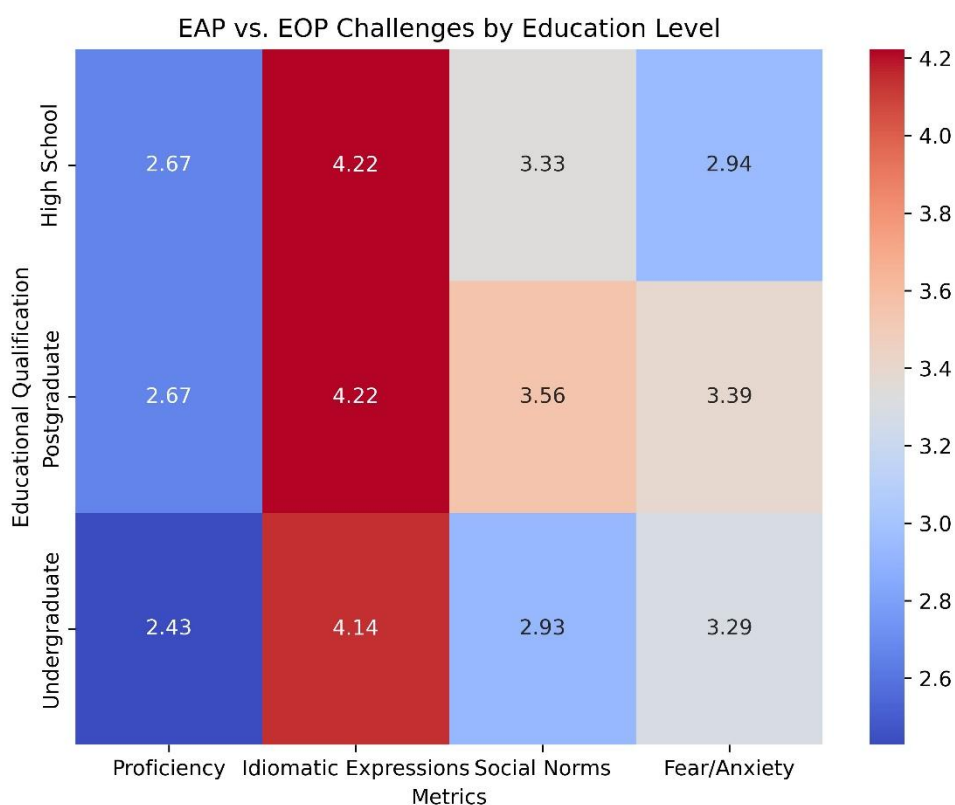


Fig. 9. EAP and EOP challenges across educational levels emphasizing idiomatic expression difficulty and anxiety in postgraduate learners in north eastern region

3.3.2 Purpose for Learning English by Location

Figure 10 reveals the distribution of EAP and EOP learners across rural and urban areas. A higher proportion of respondents focused on academic studies (EAP). This trend could reflect the emphasis on formal education in rural areas as a pathway to upward mobility. Urban respondents showed a more balanced distribution between EAP, EOP, and dual purposes (both academic and professional). This reflects greater opportunities and exposure to English in urban centre, supporting diverse motivations for learning. The chart highlights the disparity in access and focus, with rural learners predominantly driven by academic goals and urban learners having broader motivations, including professional growth.

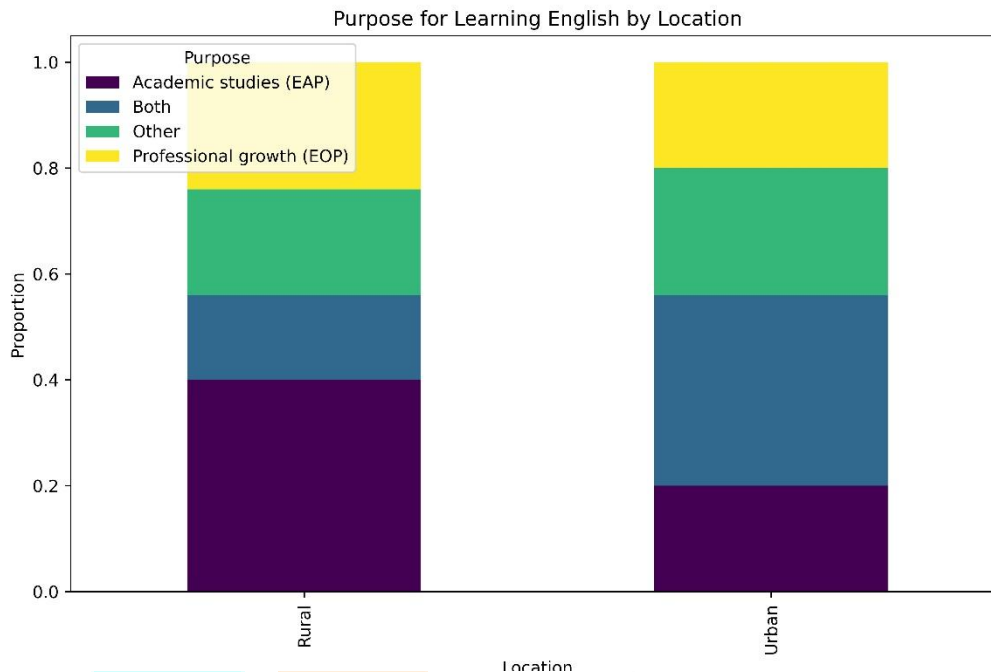


Fig. 10. Rural and urban differences in purpose for English learning with urban learners showing balanced academic and occupational motivations in north eastern region

3.3.3 EAP vs. EOP Challenges: Comparative Analysis

EAP learners reported the highest difficulty (4.4), indicating that academic contexts demand nuanced language proficiency often rooted in cultural references, while EOP learners scored slightly lower (4.0), reflecting the practical focus of workplace communication, where idiomatic expressions are less emphasized. Learners pursuing both EAP and EOP goals demonstrated the highest confidence (4.3), suggesting that exposure to dual-purpose environments enhances cultural alignment and communication confidence. Interestingly, EAP learners reported the lowest scores for resource-driven practices (2.47), while EOP learners reported the highest difficulty (2.73), emphasizing the importance of immersive, real-world practice for occupational English acquisition. Anxiety levels were similar across groups, with EAP learners slightly higher (3.27) than EOP learners (3.09), indicating a shared challenge in overcoming self-consciousness in English communication. EOP learners benefitted most from role-playing (3.18) and family/community support (3.82), highlighting the practical and social aspects of occupational English learning, while EAP learners relied more on formal educational structures. Both groups placed a strong emphasis on the integration of cultural topics, with high scores for EAP (4.4) and EOP (4.36), and similarly valued the use of technology, with EOP learners (3.82) slightly favouring digital tools over EAP learners (3.8). Proficiency scores were marginally higher for EAP learners (2.73) than EOP learners (2.36), reflecting the structured nature of academic English learning.

A t-test comparing EAP and EOP proficiency scores yielded a statistic of -0.415 and a p-value of 0.6816, indicating no statistically significant difference between the two groups. This suggests that while challenges and motivations differ, overall proficiency levels remain comparable across purposes. The comparative analysis of EAP and EOP learners shows the diverse challenges and motivations influencing English language acquisition. High school and postgraduate learners face significant difficulties with idiomatic expressions and anxiety, while undergraduate learners report the lowest proficiency. Rural learners are predominantly driven by academic goals, whereas urban learners display a more balanced focus on academic and professional growth. EAP learners emphasize structured academic frameworks, while EOP learners benefit more from practical strategies like role-playing and community support.

3.4 Evaluating the Effectiveness of Learning Strategies Across Demographics

This section analyses the effectiveness of three key learning strategies—role-playing, family/community support, and the use of technology for learning—in enhancing English language proficiency. The interpretation integrates insights from bar plots, gender-based variations, regression analysis, and interaction between demographics and strategy outcomes.

3.4.1 Overall Effectiveness of Strategies

Figure 11 presents the overall average effectiveness of the strategies, rated on a 1–5 scale. Role-Playing achieved a moderate average effectiveness score (~3.0). This indicates its practical relevance for situational and conversational skill-building but also reflects limitations due to varying contextual accessibility and learner adaptability. Family/Community Support scored slightly higher (~3.3), emphasizing the significant role of familial encouragement and societal reinforcement in language acquisition. Technology Usage emerged as the most effective strategy (~3.6). This underscores the increasing reliance on digital tools and platforms, such as language apps and online courses, for effective, interactive, and self-paced learning. These scores highlight the importance of integrating technology-based strategies into pedagogy while recognizing the complementary roles of role-playing and social support.

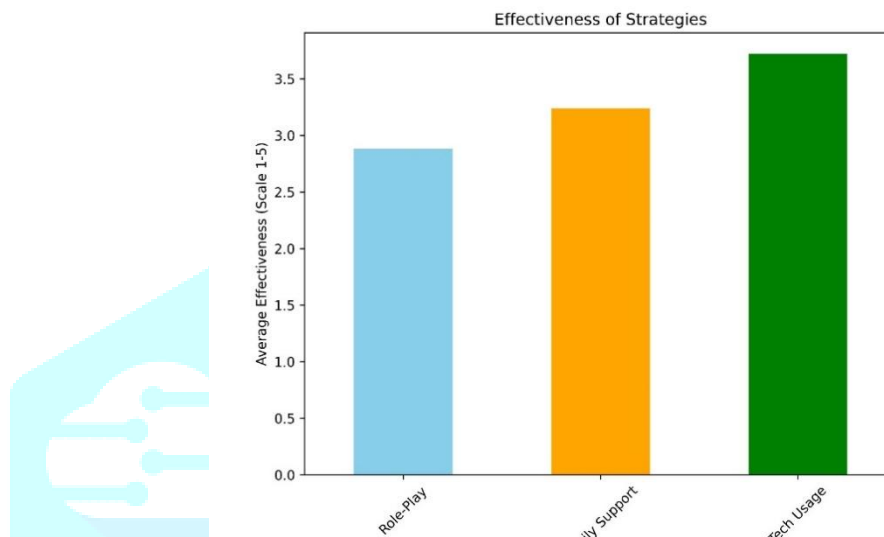


Fig. 11. Comparative effectiveness of role-playing, family support, and technology in enhancing English proficiency in north eastern region

3.4.2 Strategy Effectiveness by Gender

Figure 12 reveals gender-based differences in the perceived effectiveness of the strategies. Female Learners scored highest in role-playing (3.5) and showed strong appreciation for technology usage (3.57). This reflects their potential comfort with structured, simulated environments and technology-driven learning tools. Male Learners reported slightly lower scores for role-playing (2.77) but favoured technology usage (3.78), emphasizing the importance of digital resources in their learning approach. Non-Binary Learners: Scored lowest in role-playing (2.5), likely reflecting systemic challenges and limited inclusivity in traditional pedagogical methods. However, they rated family/community support (3.22) and technology (3.77) similarly to male learners, underscoring the value of external encouragement and digital tools. These findings emphasize the need for gender-sensitive strategies, with greater attention to inclusivity and learner-specific preferences.

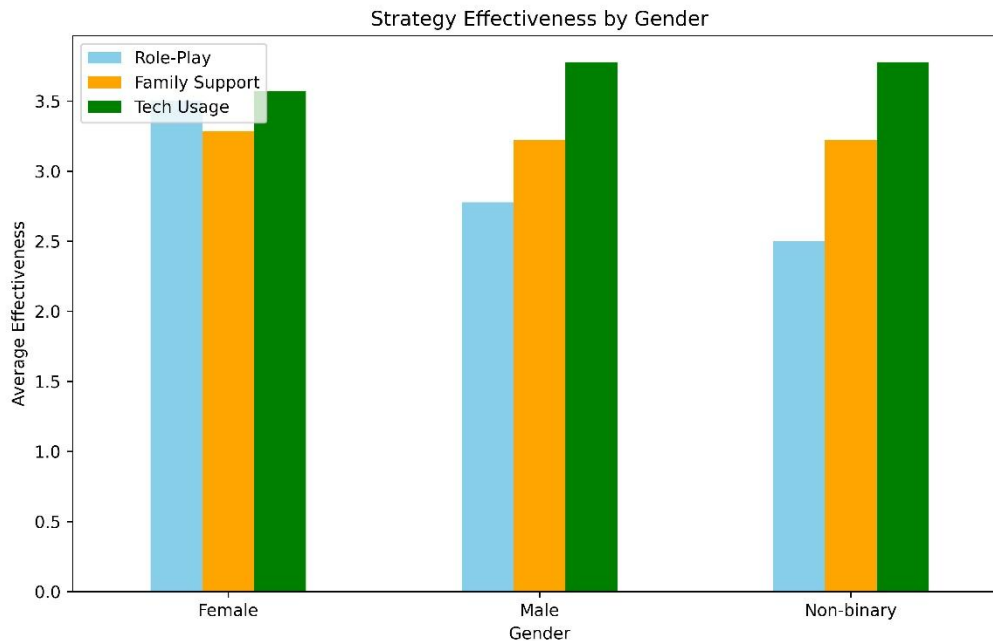


Fig. 12. Effectiveness of learning strategies by gender, highlighting distinct preferences for role-play, family support, and technology usage in north eastern region

3.4.3 Role-Playing Effectiveness by Gender and Location

Figure 13 visualizes the effectiveness of role-playing across gender and rural/urban locations, revealing key patterns. Among urban Learners, female learners reported the highest effectiveness of role-playing in urban settings, suggesting that structured environments, such as classrooms or urban social contexts, provide more opportunities for simulated interactions. Rural non-binary and male learners displayed broader variability and lower median scores, reflecting potential challenges in accessing structured role-play opportunities in less resourced settings. For the outliers few urban learners reported lower scores, suggesting that individual factors, such as personal learning preferences or lack of confidence, can influence the perceived effectiveness of role-playing. This highlights the critical role of location-based access and gender-sensitive interventions in maximizing the impact of role-playing as a strategy.

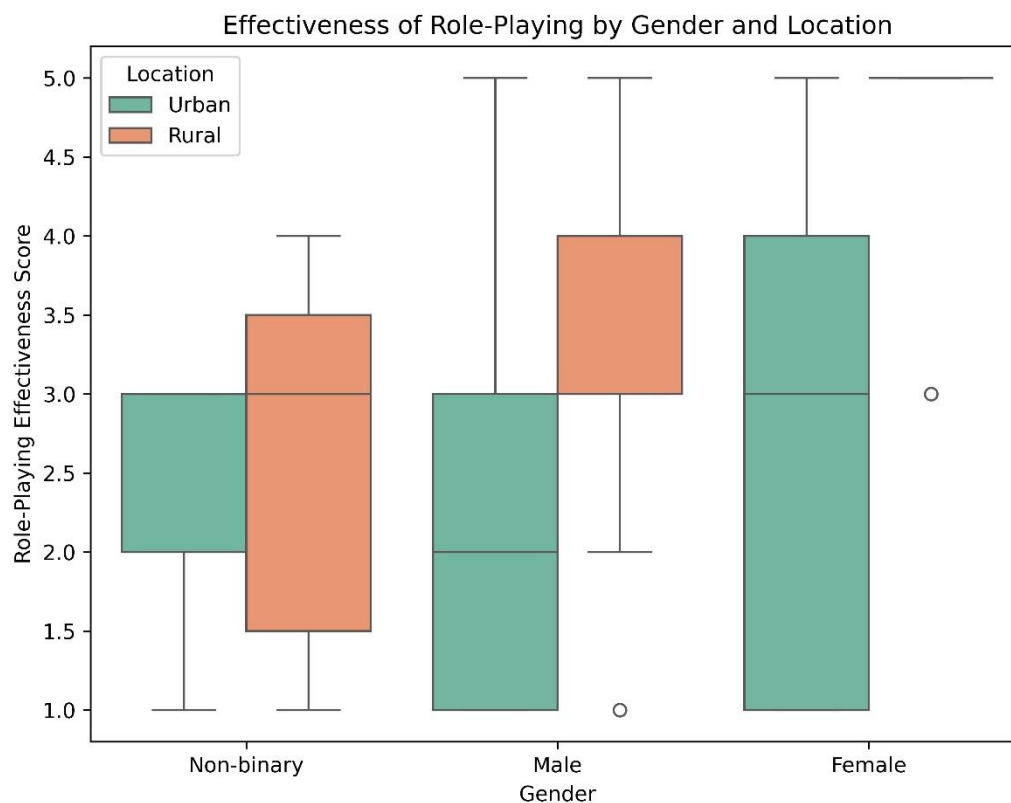


Fig. 13. Variation in role-playing effectiveness across gender and rural-urban settings, emphasizing access disparities and gender-specific challenges in north eastern region

The regression model quantifies the relationship between learning strategies and English proficiency, revealing key insights. Role-playing showed a significant negative relationship (Coefficient = -0.282, $p = 0.019$), suggesting that while effective in some contexts, its structured approach may not suit all learners, particularly those lacking confidence or familiarity with the context. Similarly, family support also exhibited a significant negative coefficient (Coefficient = -0.256, $p = 0.032$), indicating that reliance on family or community may not consistently lead to measurable proficiency gains, especially without access to formal training or additional resources. Technology usage displayed a positive but statistically insignificant relationship (Coefficient = 0.102, $p = 0.655$), implying that while useful, it alone does not serve as a definitive predictor of proficiency and works best as a complementary strategy. The adjusted R-squared value of 0.132 suggests that these strategies explain 13.2% of the variation in proficiency, highlighting the significant role of external factors in English language acquisition.

IV. DISCUSSION

The findings from the study provide a detailed understanding of the demographic, socio-cultural, and pedagogical influences on English language acquisition within the culturally distinct context of North-East India. The demographic composition of respondents, characterized by gender inclusivity and geographic diversity, provides a solid foundation for analyzing these factors. Urban learners consistently displayed higher levels of cultural confidence and proficiency, largely due to better access to English-speaking environments and educational resources. Conversely, rural learners encountered significant challenges, including resource constraints and limited exposure to English, reflecting stark geographic disparities. These findings underscore the critical need for interventions aimed at improving resource availability and access to English learning opportunities in rural areas of the North-East region (Clark, 2021).

The study's emphasis on gender inclusivity reveals compelling trends. Non-binary respondents, for instance, demonstrated relatively high levels of cultural confidence despite navigating systemic challenges, which suggests adaptability and resilience in the face of unique socio-cultural expectations. This finding points to the complex interplay of socio-cultural identity and language acquisition (Patel et al., 2020). Female respondents, on the other hand, reported systemic barriers, including heightened anxiety and limited access to resources, which align with broader gender disparities observed in education and language learning. These barriers highlight the need for gender-sensitive approaches to address the specific challenges faced by female learners in the region (Chen & Liu, 2022). The evaluation of learning strategies

among respondents highlights the varying effectiveness of role-playing, family/community support, and technology usage in enhancing English proficiency. Technology emerged as the most impactful strategy across all demographics, especially for urban learners who benefit from better access to digital tools and infrastructure. This reinforces the potential of integrating technology into language education to bridge accessibility gaps and create interactive, self-paced learning environments. For rural learners in the North-East, however, limited digital infrastructure poses significant challenges, necessitating targeted measures to improve access to technology (Kumar & Jain, 2019; Smith et al., 2021).

Role-playing demonstrated moderate effectiveness but faced contextual limitations, particularly in rural areas where structured opportunities for simulated interactions are scarce. This suggests that role-playing as a strategy may require modifications to fit the specific socio-cultural and resource constraints of rural learners (Miller, 2020). Family and community support proved to be an important source of encouragement and motivation, particularly for female and non-binary learners, who appear to derive greater benefits from the social reinforcement offered by these support networks. However, its impact was less pronounced for male learners, indicating a nuanced dynamic in how different demographics utilize social support in their language learning journeys (Ahmed et al., 2022). A comparative analysis of learners pursuing EAP and EOP revealed distinct challenges and needs within the North-East context. EAP learners reported greater difficulty with idiomatic expressions, highlighting the complexity and cultural specificity of academic English. This finding underscores the need for tailored pedagogical approaches that incorporate cultural and idiomatic elements to support academic learners more effectively (Jones, 2018; Singh et al., 2021). EOP learners, in contrast, emphasized the importance of practical strategies such as real-world applications and technology usage, which align with the functional demands of workplace communication. Interestingly, learners pursuing both EAP and EOP goals reported the highest confidence levels, suggesting that exposure to diverse learning environments positively influences both linguistic proficiency and cultural alignment (Nguyen, 2021). The study also examined the relationship between socio-cultural factors and language acquisition outcomes in the North-East. A positive correlation between cultural confidence and access to English-speaking environments reinforces the importance of exposure in enhancing proficiency (Lee et al., 2020). Urban learners, with greater access to English in educational and social contexts, consistently demonstrated higher proficiency and confidence compared to their rural counterparts. Systemic barriers faced by female respondents, such as limited access and higher anxiety levels, align with findings from gender studies, which highlight the compounded challenges faced by women in education (Chatterjee, 2019). Non-binary learners, however, exhibited higher cultural confidence despite facing systemic hurdles, challenging conventional assumptions about the uniform disadvantages experienced by marginalized groups (Kim et al., 2021).

Interestingly, the study found negligible influence of social norms on anxiety levels, contrasting with the assumption that societal expectations are a primary driver of anxiety in language learning contexts. This divergence from traditional views suggests that the impact of social norms on language learning anxiety may be less significant in the North-East than previously believed, or may operate in more context-specific ways (Gupta & Ramesh, 2022). The findings highlight the critical role of technology as a learning strategy, supporting existing literature that advocates for its integration into language education (White et al., 2020). Technology not only facilitates personalized and interactive learning but also has the potential to address geographic disparities by providing access to diverse resources, even in remote rural areas (Tan et al., 2021). However, the limited impact of role-playing in rural settings indicates a need for adaptations that account for the specific resource and contextual constraints in these areas (Anderson et al., 2020). Family and community support, while effective in fostering motivation and confidence, shows varying impacts across demographics, reflecting the complex interplay of social and cultural dynamics in learning processes (Wu et al., 2022).

These emphasise the multi-dimensional nature of English language acquisition in the North-East, shaped by demographic, socio-cultural, and pedagogical factors. Patterns such as the resilience of non-binary learners, the systemic challenges faced by female learners, and the universal effectiveness of technology underscore the diversity of experiences within the region. While the results align with much of the existing literature, they also challenge traditional assumptions, offering new perspectives on the intersection of socio-cultural identity and language learning. These insights highlight the importance of area-specific, inclusive approaches to curriculum design that incorporate cultural integration, improved resource access, and technology-driven methods. Such measures are essential to optimize learning outcomes and address the systemic inequities faced by language learners in the North-East region.

4.1 Strategies for Overcoming Socio-Cultural Barriers in NE India

Overcoming socio-cultural barriers in EAP and EOP in NE India requires culturally responsive teaching and blended learning tailored to the region's diversity. Teaching methods must integrate local cultural narratives to foster inclusivity, ensuring learners feel represented (Kaplan, 1966). Cultural sensitivity training should be a core part of EAP/EOP programs, helping learners navigate intercultural challenges in the multilingual and multicultural NE context (Hofstede, 1980). Content must align with real-life experiences to enhance relevance, particularly addressing the unique socio-cultural dynamics of rural, tribal, and urban learners (Spencer-Oatey, 2000).

Activities like group discussions, role-playing, and peer collaboration promote understanding across cultures, while curricula must balance academic and occupational content to meet regional demands, such as tourism, education, and public services (Darvin & Norton, 2015; Hyland, 2006). Blended learning complements this by combining digital tools with traditional methods to address socio-cultural challenges. Peer-led forums and group projects improve intercultural competence by fostering interaction across rural and urban learners (Anton, 1999). Culturally aware educators are crucial in bridging gaps in learners' understanding of socio-cultural norms (Lantolf & Thorne, 2006). Digital tools, like AI-based platforms, offer self-paced learning and reduce anxiety, particularly aiding rural learners with limited access (Godwin-Jones, 2015). Simulated scenarios, such as role-playing and case studies, help prepare learners for real-world challenges in NE's diverse contexts (Hutchinson & Waters, 1987). This approach provides flexibility to address the barriers unique to rural learners (O'Dowd, 2007).

Curriculum design for EAP/EOP in NE India must integrate cultural components and distinguish academic and occupational pathways. Cultural integration prepares learners for linguistic and contextual nuances in diverse settings, with content focusing on communication styles, etiquette, and intercultural strategies. Hofstede's (1980) and Spencer-Oatey's (2000) frameworks are key in aligning communication approaches with cultural expectations. Case studies and real-world scenarios enhance adaptability and foster practical skills (Hutchinson & Waters, 1987). Differentiation is critical as EAP emphasizes academic vocabulary, writing conventions, and critical thinking for academic discourse. Targeted vocabulary instruction (Coxhead, 2000) and discipline-specific content (Hyland, 2006) support academic goals. EOP, in contrast, focuses on practical communication skills like reports, emails, and presentations tailored to professions. Needs analysis ensures alignment with job demands (Basturkmen, 2010). Assessments must also reflect these differences: EAP requires academic evaluations (e.g., research papers), while EOP benefits from scenario-based tasks (e.g., workplace role-plays) (Hutchinson & Waters, 1987). Integrating cultural components with differentiated curricula equips NE learners for both academic and occupational success.

Policies must focus on creating inclusive, resource-rich environments for EAP/EOP in NE. Intercultural training and cultural competence must be central to programs, with policies mandating workshops to address socio-cultural barriers (Hofstede, 1980). Institutions should prioritize educator training to deliver culturally responsive teaching and adapt materials to diverse learner needs (Hyland, 2006). Equitable access to digital tools is critical for implementing blended learning, especially in rural NE, where infrastructure gaps hinder progress (Godwin-Jones, 2015). Policies should promote assessment frameworks evaluating both language proficiency and cultural competence (Basturkmen, 2010). To reduce disparities, policymakers must prioritize funding and infrastructure development in underserved rural areas (O'Dowd, 2007).

4.2 Future Directions for NE India

Future research in NE should explore the integration of AI and VR into EAP/EOP to create immersive, personalized learning. AI-driven tools can address learners' socio-cultural and linguistic needs in the region's multilingual environment (Godwin-Jones, 2015). Longitudinal studies could evaluate the long-term impact of culturally responsive teaching on academic and occupational success (Hutchinson & Waters, 1987). Comparative research across NE's diverse cultures could provide insights into how local norms affect language learning, supporting globally adaptable strategies (Spencer-Oatey, 2000). Studies should also assess the role of peer learning in reducing socio-cultural anxiety and fostering competence (Darvin & Norton, 2015). Further investigation is needed into differentiated curricula's effectiveness for EAP/EOP learners, particularly underrepresented groups (Coxhead, 2000). Lastly, policy-level research should focus on addressing resource and infrastructure disparities in rural NE, ensuring equitable access to quality education (O'Dowd, 2007).

V. CONCLUSION

This study highlights the critical role of socio-cultural dynamics in shaping English language acquisition in NE India, emphasizing the interplay between cultural confidence, identity, and social norms. By focusing on EAP and EOP learners in this culturally diverse region, the research provides actionable insights for creating inclusive and context-sensitive pedagogical strategies. Integrating cultural components into curricula, such as intercultural training and real-world scenarios, is essential to bridging gaps between academic and occupational language learning. Technology-driven and collaborative approaches, including role-playing and simulations, further address the specific needs of learners in NE, particularly those from rural areas with limited resources. The findings call for greater investment in teacher training, digital infrastructure, and equitable resource allocation to address regional disparities. Institutions must adopt holistic assessment frameworks that evaluate both linguistic proficiency and cultural competence, ensuring that learners are prepared for diverse communicative contexts. Policymakers, educators, and researchers must work collaboratively to tailor language education to the socio-cultural realities of NE, creating opportunities for learners to thrive academically and professionally. By addressing these barriers, language education in NE can transcend traditional linguistic boundaries, fostering cultural adaptability, global engagement, and long-term success for learners.

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