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Using ASR and NLP-Based Tools to Foster Beninese EFL Advanced Students' Oral Communication in Some Secondary Schools in Littoral Region

Sourou Corneille Teba FLASH-Adjarra University of Abomey-Calavi, Benin Republic

Abstract

This study focuses on exploring oral communication challenges encountered by EFL students with a specific focus on assessing the potential effectiveness of Automatic Speech Recognition (ASR) and Natural Language Processing (NLP) in addressing these challenges. This research incorporates elements of both mixed and quasi-experimental methodologies. The data were gathered through interviews, and questionnaires involving eight (8) English as a Foreign Language (EFL) teachers, three hundred (300) EFL students, and 10 school authorities. Subsequently, an experimental phase was implemented with a sampled group of one hundred (100) students and one (1) teacher. The results were presented in frequency and percentages through charts and tables and show that, despite challenges hindering the integration of ASR and NLP in language learning, these tools remain pivotal for enhancing oral communication skills among EFL students. The results serve as a catalyst for ongoing discussions and actions aiming at unlocking the transformative potential of ASR and NLP in improving EFL students' oral communication skills.

Keywords: ASR, NLP, EFL Advanced Students, Oral Communication

1. Introduction

The 21st century education is characterized by emerging trends like app innovation and gamification, digital literacy and education, library media specialists, self-directed professional development, and collaborative learning. These characteristics cumulated with the latest accelerating pace of change in today's technologies and workplaces, favours an irremediable remodelling of the workplace and workforce. In order to adapt to this evolving digital society, there is a pressing need for the educational system to equip the upcoming generation of students with the skills required to meet these demands. In Beninese EFL classes, the traditional approach teaches English as a subject with grammatical rules and relies essentially on textbooks (mostly outdated and uncontextualized), sometimes on audio and video records with limited

opportunities for interaction and real-time feedback. Unfortunately, with large classes and in a context where English is not widely spoken and practiced outside of the classroom, this approach reaches its limits and becomes ineffective.

As a result, Beninese EFL advanced students often struggle developing their oral communication skills due to limited opportunities to practice and receive real-time and impartial feedback from the teacher. Furthermore, if the current situation is unchanged, it depicts a very dark portray for upcoming generation of learners and the educational system which will produce disabled and inadequate citizens. Although there is a growing interest in technology-based approaches to EFL learning, the use of AI-based tools such as Automatic Speech Recognition (ASR) and Natural Language Processing (NLP) is still a relatively unexplored area in Beninese EFL education, hence the need to investigate the potential effectiveness of these tools as a supplement to regular teaching in improving Beninese EFL advanced students' oral communication skills.

The purpose of this paper is to explore the potential effectiveness of ASR and NLP-based tools in fostering the oral communication skills of Beninese English as a Foreign Language (EFL) advanced students. This study aims firstly to identify challenges related to EFL advanced students' oral proficiency. Secondly, this study aims to evaluate the impact of Automatic Speech Recognition (ASR) and Natural Language Processing (NLP) tools on Beninese EFL advanced students' oral communication skills in selected secondary schools in the Littoral Region of Benin. Finally, through investigating how these tools can be effectively integrated into EFL classroom instruction, this study aims to provide insights into the challenges and opportunities of incorporating technology into language learning in a developing country context.

This study provides answers to the following questions:

1. What are the challenges related to oral communication encountered by EFL advanced students?

2. What is the impact of ASR and NLP-based tools on Beninese EFL advanced students' oral communication skills?

3. How can ASR and NLP-based tools be effectively integrated into EFL classroom instruction to improve Beninese EFL advanced students' oral communication skills?

2. Theoretical Keystones

2.1 ASR and NLP in Intelligent Computer Assisted Language Learning

Artificial Intelligence powered and based applications, platforms, programs and technologies like ASR and NLP arise from the Vygotskian constructivist theory of learning (1978) and Long's interactionist perspective of Second Language Acquisition (1981). At the early age of Computer-Assisted Language Learning (CALL), Automatic Speech Recognition (ASR) has been used for pronunciation training, but unfortunately, until the

recent development in Artificial Intelligence (AI) it lacks 10 effectiveness. Indeed, in today's technology-aware learners and their digitalized learning environment, according to Lopes and Meurers (2011:.2) "such tools help fulfil the undisputed need for contextualized, communicative language use in the acquisition process". Natural Language Processing (NLP) is the branch of Artificial Intelligence (AI) which gains momentum with the advent of machine learning and deep learning. In fact, NLP features computers with the ability to understand, generate and manipulate human language.

ASR (Automatic Speech Recognition) and NLP (Natural Language Processing) are used in Intelligent Computer Assisted Language Learning (ICALL) systems to enhance language learning by providing learners with personalized and interactive experiences. While the former is used to transcribe and analyze spoken language, the latter focuses on the analysis and understanding of human language. When ASR and NLP are combined, they provide learners with opportunities to notice the gap between their interlanguage (production) and virtual partners' TL structures (written or spoken), during social-like activities (Lee, 2019)

2.2 Theories underlying ASR and NLP in EFL Learning

For over twelve centuries a debate has been held by Sanskrit grammarians on whether language is innate or learnt. Language acquisition hinges around four major theories (behaviourist, innateness, cognitivism, and interactionism) from four theorists (Skinner, Chomsky, Piaget, and Bruner) to explain how children learn to understand and speak a language. The behaviourist Skinner (1957) proposed his theory based on positive and negative reinforcement. Earlier, describing verbal behaviour, Skinner (1953:299) mentions that it *"always involves social reinforcement and derives its characteristic properties from this fact"*. Behaviourists advocate that children learn through imitation, positive reinforcement, and praise. Contradicting this view, Chomsky (1957) advocates in *"Syntactic Structures",* his criticism of the behaviourist theory, the innateness of language acquisition. Based on shared principles of all languages, Chomsky draw the Language Acquisition Device (LAD) which he defines as the child's brain ability to interpret language based on the inborn knowledge of the underlying principles or structure of language. In contrast, Jean Piaget in his cognitivist theory asserts that language learning is the product of assimilation and accommodation. On the other hand, Bruner from the interactionist point of view posits that children acquire and perfect language through interactions with more experienced linguistic figures.

As we slowly shift our focus from theories which emphasize observable actions, the Technology Acceptance Model (TAM) delves into the cognitive processes and psychological factors influencing individuals' decisions to embrace and integrate new technologies. The Technology Acceptance Model (TAM) developed in 1989 by Davis assumes that when users perceive that a type of technology is useful and easy to use, they will be willing to use it. But unfortunately, Davis et al. (1992)

Due to the complexity of new technologies like personal computers and the uncertainty decision-makers feel about their successful adoption, individuals develop attitudes and intentions towards learning to use the technology before making efforts to utilize it. These attitudes and intentions might be poorly developed or lack

conviction, or they might only form after initial attempts to learn the technology. Consequently, actual usage may not directly or immediately follow from these attitudes and intentions.

The introduction and especially acceptance of technology in the education, field push forward rising approaches to second language teaching like communicative Language Teaching (CLT).

While there are as many definitions as researchers, all agree on the fact that CLT is communicative competence development based. Furthermore, defining this "spirit of CLT", Pham (2007:196) advocates in terms compatible with Harmer's "umbrella" definition, that "learning is likely to happen when classroom practices are made real and meaningful to learners" and that the goal is to teach learners "to be able to use the language effectively for their communicative needs". Besides, Littlewood (1981:1) asserts, one of CLT most fundamental characteristics is that *"it pays systematic attention to functional as well as structural aspects of language, combining these into a more fully communicative view".*

Delving deeper into the communicative approach to language teaching, it becomes evident that a seamless integration of Pedagogical Content Knowledge (PCK) is pivotal for educators to skillfully translate theoretical foundations into actionable classroom methods. PCK is an approach to teaching which focuses on teachers' interpretations of subject matter knowledge in the context of helping students to easily understand the concept being taught. Indeed, Shulman (1987) defines PCK as the amalgamation of content and pedagogy to enhance the understanding of how particular topics, problems, or issues are organized, represented, and adapted to the diverse interests and various levels of abilities of learners. According to Shulman (1987:9) *"PCK also includes an understanding of what makes the learning of specific topics easy or difficult".* Simply put, PCK points out the difference between knowing something and knowing how to help others understand it.

3. Methodology

3.1 Research Design

This research combines a mixed and quasi-experimental design to prioritize internal validity and address selection bias. The quasi-experimental approach allows for causal inferences in real-world educational contexts. Using a mixed-methods approach, the study integrates quantitative and qualitative elements for a comprehensive understanding of educational interventions. This hybrid design enhances flexibility, feasibility, and exploration of causal relationships. Overall, the research provides nuanced insights into educational interventions while navigating practical constraints and ethical considerations.

3.2 Sampling

Table 1 : Sampling

Schools	Classes	Teachers	Students	School authorities
College Martin LutherKin	02	02	80	02

CEG Segbeya	01	01	100	02
CEG Sainte Rita	02	02	40	02
CEG Dantokpa	03	02	30	02
CEG Akapkpa-centre	02	01	50	02
Total	10	08	300	10

3.3 Experimental Sampling

Table 2 : Experimental Sampling

School	Groups	Number of Teachers	Number of Students
CEG Segbeya	**CG**	01	50
	EG		50
TOTAL		01	100

3.4 Research Instruments

To obtain, measure, and analyze data collected from the sampling, the research uses the following instruments: Questionnaire to EFL teachers and students, Interviews to EFL teachers and school authorities, IELTS Academic (listening and speaking test), Experimentation Given the paramount importance of these instruments, it is worthwhile to provide a detailed description for each of them.

3.4.1 Questionnaire to EFL Teachers and Students

A questionnaire is a research instrument featuring a series of open-ended and/or close-ended questions aiming at collecting useful information from teachers and learners. It is a fast and efficient means of gathering huge amounts of information from sizeable sample volumes. The present study addresses a set of ten (10) questions to eight (08) EFL teachers and three hundred (300) EFL students. The questionnaire is designed to gather insights and opinions to assess the feasibility and potential benefits of incorporating ASR and NLP-based tools in EFL teaching for advanced classes in Benin.

3.4.2 Interviews to EFL Teachers and School Authorities

An interview is a qualitative research method employed for gathering primary data by engaging individuals or groups in discussions about their perspectives on a given subject. This technique enables researchers to acquire in-depth insights that may not be accessible via alternative research methodologies. This study addresses a set of five (05) questions to five (05) EFL teachers and five (05) school authorities. These interviews aim at inquiring about teachers and school authorities on the current state of English language education in Benin and how ASR and NLP based technology can be used to enhance advanced EFL students' oral communication skills.

3.4.3 Experimentation

Table 3: Experimentation Process

Stages	EG	CG
1	Pre-test	Pre-test
2	Treatment (ASR and NLP-based tools)	No-treatment
3	Post-test	Post-test
4	Comparisons and analysis	

3.5 Data Collection Procedures

Questionnaires were distributed to both sampled EFL teachers and students. Many students successfully filled out and returned the questionnaires, as assistance was provided in creating the French version. Additionally, questionnaires were also sent to teachers, and all responses were collected. Notably, it is sent a total of 300 questionnaires to students, achieving a remarkable hundred percent (100%) response rate. Senior teachers have been interviewed to gather their perspectives on three specific questions related to the topic. Each interview lasts between fifteen (15) to twenty-five (25) minutes per teacher, with each question receiving a maximum of five (05) minutes. All ten (10) interviewed teachers provided accurate and detailed answers to the questions.

3.6 Methods of Data Analysis

Among the previously mentioned target population, questionnaires were created for teachers and students with the aim of obtaining valuable and intriguing data. All collected data underwent thorough analysis using statistical software tools such as SPSS 27 and Excel 2022. All the data collected by the researcher have meticulously been analyzed and the results have been presented in tables, charts, and pie-charts according to each instrument. Following a comprehensive review of the investigative methodology employed, the results of this research work have been presented and discussed in the next chapter.

4. Results

4.1 Hindrances Related to EFL Students' Oral Communication

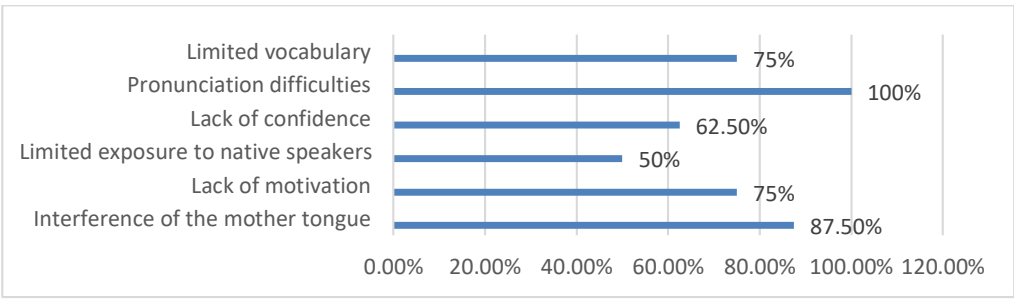

Figure 1: EFL Students' Oral Communication Challenges

Figure 1 presents EFL students' oral communication challenges. According to the figure, interference of the mother tongue (87.50%), lack of motivation and confidence (75% + 62.50%), limited exposure to native speakers (50%), pronunciation difficulties (100%) and limited vocabulary (75%) are oral communication challenges encountered by EFL learners.

4.2 Teachers' Insights on ASR and NLP Tools Integration

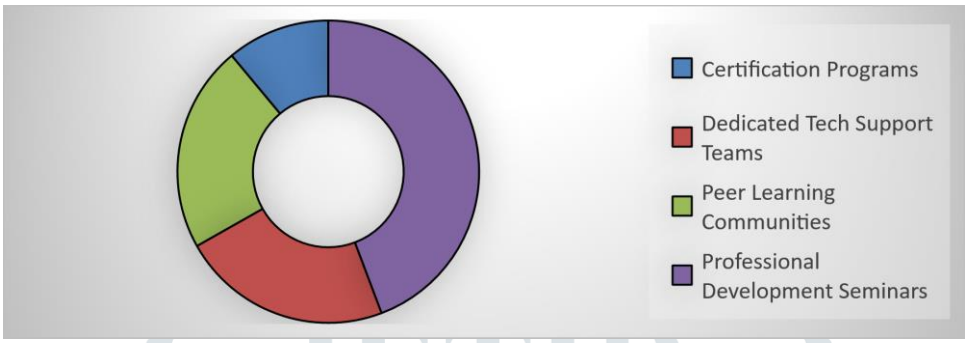

Figure 2: EFL Teachers' Perspectives on ASR and NLP Tools Integration

Figure 2 rely on teachers' responses from multiple viewpoints, to draw general opinions on ASR and NLP based tools integration in EFL classes to improve students' oral communication skills. From these opinions, most respondents strongly agree (25%) or agree (37.50%) on the potential of ASR and NLP based tools to improve EFL advanced students' oral communication skills while some remains neutral (12.50%) and others either disagree (12.50%) or even strongly disagree (12.50%).

4.3 Students' Assessment and Evaluation Approach

Table 4: Students' Assessment and Evaluation Methods

Oral Communication Skills Assessment and Evaluation Methods	Percentage (%)
Through traditional exams	62.50%
Through speaking assessments	12.50%
Both	25.00%
Neither	0.00%

Table 4 enumerates different methods for oral communication assessment and evaluation. From to this table, some EFL teachers (25%) focused on both traditional exams and speaking assessments while other either used traditional exams (62.50%) or speaking assessments (12.50%).

4.4 Teachers' Guidance for Effective ASR and NLP Integration

Figure 3: Teachers Training or Support for Effective ASR and NLP Integration

Figure 3 reveals teachers' training or support methods for an effective ASR and NLP integration in EFL classes. The result from this figure reveals that teachers unanimously (100%) express a need for in-class training. On one hand, mentorship programs (75%), Workshops (62.50%) and professional development seminars (50%) are mainly suggested by respondents. On the other hand, online tutorials (37.50%), peer learning communities (25%), dedicated tech support teams (25%) and certification programs (12.50%) are suggested.

4.5 Benefits of ASR and NLP Integration for Oral Communication

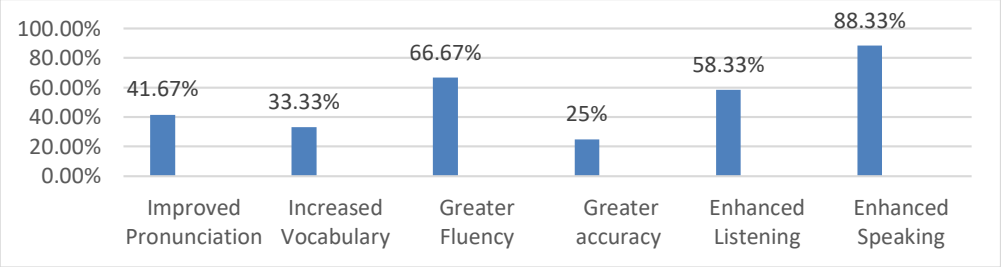

Figure 4: Benefits of ASR and NLP Integration for Oral Communication

According to figure 4 which hand over advantages of ASR and NLP integration for EFL students' oral communication skills improvement, the integration of these technologies could lead to enhanced speaking (88.33%) and listening (58.33%) skills. Moreover, respondents also mentioned greater fluency (66.67%) and accuracy (25%), improved pronunciation (41.67%) and increased vocabulary (33.33%) as potential benefits of ASR and NLP-based tools integration in their EFL learning process.

4.6 Interview Report

The interview sessions revealed the current state of English language education in Benin and possible improvements technology integration (ASR and NLP based technologies) can bring to enhance advanced EFL students' oral communication skills. During discussions on English language education in Benin, interviewees highlighted English functions as a second language alongside the official French medium. The government's interest in promoting English education was noted but while advanced English courses exist, resource constraints compared to French education contribute to varying proficiency levels among students. Addressing challenges faced by advanced English as a Foreign Language (EFL) students, initiatives such as language labs, competitions, and extracurricular activities were discussed. Cultural and educational exchange programs, as well as advanced English courses offered by private language training centers, were seen as valuable opportunities for students to enhance their oral communication skills.

In the interview with school representatives, the significance of technology, including Automatic Speech Recognition (ASR) and Natural Language Processing (NLP) tools, in language education was emphasized. The school policy-makers adopta proactive approach, viewing technology as a resource to enhance language learningand communication skills. The focus is on aligning technology with today's educational

philosophies and student needs. Furthermore, it has also been mentioned that school policy-makers have established policies and guidelines for technology integration, emphasizing responsible and effective use. These policies cover aspectssuch as data privacy, online behavior, and the importance of providing professional development for teachers. Indeed, interviewees, to support effective implementation of ASR and NLP tools, propose professional development opportunities for teachers,access to technology resources, workshops for students, online community forums,and comprehensive resources including instructional materials.

4.7 Experimentation

The experimental and control groups underwent a pre-assessment to confirm the absence of statistically significant differences in their performance prior to the experiment. Subsequently, a post-test has been conducted to measure the impact of ASR and NLP-tools implementation on EFL advanced students' oral communication skills. The experiment outcomes were statistically assessed through the one-way analysis of variance (One-way ANOVA). In this analysis, the dependent variable isstudents' oral communication skills, and the independent variable is ASR and NLP tools integration. The data were processed using SPSS 26 under the following conditions:

1. **Formulation of Hypotheses:**
    - Null Hypothesis (Ho): There is no statistical significance between the effect of ASR and NLP tools integration and students' communication skills.
    - Alternative Hypothesis (H1): There is a statistical significance betweenthe effect of ASR and NLP tools integration and students' communication skills.
2. **Level of Statistical Significance**: The level of statistical significance is represented by a p-value between 0 and 1. A p-value less than 0.05 (typically
≤ 0.05) is considered statistically significant. This suggests strong evidence against the null hypothesis, indicating that there is less than a 5% probabilitythat the observed results occurred by chance.
3. **Hypothesis Rejection**: If Ho (null hypothesis) is rejected based on thestatistical analysis, then H1 (alternative hypothesis) is considered supported. This means that the data provide enough evidence to conclude that there is a statistically significant effect.
4. **The practical significance (the real-life significance)**: It expresses thestrength of the correlation between our variables and assessed through the Effect size (expressed in ETA squared value).

In summary, the goal is to demonstrate the statistical significance of the impact of ASR and NLP tools integration and students' communication skills by rejecting the null hypothesis and providing information on the practical significance throughthe ETA squared value.

Table 5: Descriptive statistics for pre-test scores

Group	N	Mean	Standard Deviation	Standard Error
Experimental	50	50	5	0.707
Control	50	48	5	0.707

Table 5 provides descriptive statistics for the pre-test scores of the experimental and control groups. It shows the means, the standard deviation, and the standard error for each group. The Experimental Group (EG) participants scored a mean of 50, a standard deviation of 5, and a standard error of 0.707. Similarly, the Control Group (CG) exhibited a mean score of 48, a standard deviation of 5, and a standard error of 0.707. This suggests that there is no significant difference betweenthe means of the experimental and control groups since the Cohen's d for these results is approximately 0.40 (d = (50 - 48) / 5 = 0.40).

Table 6: Descriptive statistics for post-test scores

Group	N	Mean	Standard Deviation	Standard Error
Experimental	50	75	7	0.989
Control	50	50	8	1.131

Table 6 presents descriptive statistics for post-tests scores of the experimental and control groups. According to these statistics, the experimental group realizes a mean of 75, a standard deviation of 7 and a standard error of 0.989 while the controlgroup realizes a mean of 50, a standard deviation of 8 and a standard error of 1.131.

Table 7 : ANOVA post-tests scores

Source	Sum of Squares(SS)	Degrees of Freedom (df)	Mean Square (MS)	F-Value	p-Value
Between Groups	5279.31	1	5279.31	327.91	≈0.0001
Within Groups	1576.92	98	16.10		

Table 7 reveals the results of the ANOVA test for the post-test scores. It includes key statistical metrics such as the sum of squares (SS), degrees of freedom(df), mean squares (MS), F-statistic, and p-value for each specific source of variation. According to the table, the Between Groups' sum of squares (SS) of 5279.31, with 1 degree of freedom, indicates the variability among group means. The "Within Groups" SS of 1576.92, with 98 degrees of freedom, represents the variability within each group. The F-value of 327.91, associated with a very small p-value (≈0.0001), indicates a highly significant difference between at least two groups. This

suggests that the observed variation between group means is not likelydue to random chance alone.

Table 8: Hypothesis testing and effect size for post-test

Null Hypothesis (H_0)	Alternative Hypothesis (H_1)	Effect Size (η^2)
Rejected	Accepted since $p \leq 0.05$	0.77

Table 8 tests hypotheses and measures effect size for post-tests. The hypotheses tests reject the null hypothesis (there is no statistical significance between the effect of ASR and NLP tools integration and students' communication skills) and accept the alternative hypothesis (there is a statistical significancebetween the effect of ASR and NLP tools integration and students' communication skills). These results suggest that for 77% of the cases, the use of ASR and NLP tools at CEG SEGBEYA has an extremely positive impact on EFL students' oralcommunication performance.

5. Discussion of Results

5.1 EFL Advanced Students' Oral Communication-Related Challenges

EFL students often encounter a myriad of challenges in the realm of oral communication. Zhang (2009) asserted that speaking is the most challenging skill for the majority of English learners to master, and many still struggle with oral communication in English.

Indeed, oral communication challenges are characterized by difficulties to clearly express thoughts and ideas in the target language (English). Exploring these challenges in Beninese context, it has been noticed that interferenceof the mother tongue, lack of motivation and confidence, limited exposure to nativespeakers, pronunciation difficulties and Limited vocabulary refrain students' oral communication skills improvement (figure 1). Additionally, information overload and lack of personalization also prevent oral communication skills improvement. In the same vein, Al Nakhalah (2016), notes "fear of mistake, shyness, anxiety, and lack of confidence" as break to oral communication improvement.

Furthermore, Ur (1996) explains students complain about their inability to think of something, and they lack motivation to express themselves. Earlier, Rivers(1968) justifies Ur's concern by the fact that, topics provided by teachers are not suitable for students. Legitimating Ur, Rivers raises the issue of personalization of learning which gains momentum today. Moreover, students often hesitate to take the floor, and even the more courageous of them lack vocabulary and start stuttering during presentations. Despite teachers' devotion in large classes, students' participation and motivation rate is not taking off. These results align with Adaba's (2017) research, which identified common challenges in students' oral expression. According to Adaba's findings, a significant number of teachers were found to have limited experience with CLT, relying instead on traditional, teacher-centered English teaching methods.

In light of today's digitized and intelligent world, students increasingly gravitate towards digital learning, showing a clear preference for it over traditional physical courses and conventional learning systems.

5.2 ASR and NLP-based Tools Impact on Oral Communication Skills

The failure of conventional teaching methods to provide effective results, the unprecedent development in technology and the recent uprising of Artificial Intelligence reinvented EFL teaching and learning and raises several concerns. Indeed, few teachers evaluate speaking or oral communication skills in their classes(table 4). However, based on recent studies, proficiency in foreign language communication is strongly linked to a person's pronunciation skills (Thomson and Derwing, 2014; Evers and Chen, 2022). Moreover, accurate pronunciation not onlyimpacts language educators but also plays a crucial role in learners' self-confidenceand employment opportunities (Hosoda et al., 2012). The need for ASR and NLP introduction in language classes arises from the different concerns about traditionaleducation and the evolving generation of digital learners.

In Benin, relying on ASR and NLP based tools for EFL students' oral communication skills improvement, will lead to improved pronunciation, vocabulary, fluency, and accuracy deriving in enhanced listening and speaking skills(figure 4). Moreover, ASR and NLP technologies can address specific challenges faced by EFL learners, such as regional accent variations and common grammatical errors. The instant feedback provided by these tools allows students to identify and correct mistakes promptly, contributing to more effective and efficient learning. In fact, automated feedback can encompass a spectrum, extending from the dismissal of poorly articulated statements to the identification of specific issues related to phonetic clarity or emphasis on particular phrases (Yu and Deng, 2016; Lai and Chen, 2022). In addition, with ASR and NLP tools, a focus is on each student even in large classes where teachers have difficulties to effectively evaluate students. Asthese technologies-based programs are not subject to fatigue or even mood swing, they remain completely impartial and unbiaised. From students' focal point, such tools could only benefit them and propel their oral proficiency level to help them build confidence and fluency in conversations. According to Jiang et al. (2023), this tailored method enables learners to direct their attention towards specificweaknesses and use their efforts judiciously.

Hence, to substantiate these theoretical assumptions, the results of the experimentation unequivocally illustrate the efficacy of ASR and NLP-based tools in enhancing the oral communication performance of EFL students. This is evidentfrom the statistical results indicating that 77% of the observed variability in students'oral performance can be attributed to the utilization of ASR and NLP tools (table 8).

5.3 Integration of ASR and NLP-based Tools in Classroom Instruction

Nowadays, moving towards an effective e-learning language class remains a challenge. Beside teachers fear of the unknown and the biased perception of artificialintelligence as a threat to their jobs (Hrastinski et al., 2019). Integrating AI in education is an asset for both learners and teachers as Cheng & Tsai (2019) ensure that the interaction of the teacher with students is irreplaceable in learning progressand students' individual development. Nonetheless, it is crucial to acknowledge that certain hindrances, like ASR and NLP-based technology integration in the curriculum the lack of access to technology, the potential risk of over-reliance on technology need to be highlighted.

Moreover, providing EFL teachers and students with adequate training and support will tend to facilitate these technologies integrating in both teachers and learners' daily routine. Teachers propose key materials for effective ASR and NLP Integration such as in-class training to be in touch with field realities and needs, mentorship programs to support teachers, workshops, professional development seminars to exchange with colleague, online tutorials and certification programs. As highlighted by Li (2020) and Cavalcanti et al. (2021), to maximize the benefits of AI in education, teachers must possess adequate pedagogical knowledge to effectively leverage AI-based tools. Indeed, in language instruction, educators can leverage advanced tools like Julius and Kaldi forprecise speech recognition customization, alongside SpaCy and GPT-3, which offerefficient text analysis and enable the creation of context-aware language exercises. This comprehensive suite enhances the learning experience by providing tailored and insightful materials, facilitating a dynamic and engaging educational environment. Overall, a seamless integration of ASR and NLP technologies in English language education, starts by eliminating all ASR and NLP related fears andapprehension from teachers and learners mind and convincing them of the benefits of these technologies.

6. Conclusion

In conclusion, this study delves into the transformative potential of integrating Automatic Speech Recognition (ASR) and Natural Language Processing (NLP) tools in enhancing oral communication skills among Beninese EFL advanced students. Motivated by the persistent shortcomings of traditional teaching methods to produce proficient English speakers, the researcher embarked on a comprehensiveexploration of how ASR and NLP technologies can revolutionize language education.

To achieve the study's objectives, a rigorous process unfolded, starting with an in-depth understanding of Artificial Intelligence and its applications through extensive literature review. Subsequently, the researcher designed both questionnaires and interviews, engaging students, teachers, and school authorities to gather diverse perspectives on the current state of English language education in Benin and the potential contributions of ASR and NLP technologies. An experimental phase further sought to validate the hypothesized benefits of ASR and NLP tools in improving oral communication. The culmination of these efforts resulted in a dataset that paints a compelling picture of the usefulness and prospective advantages of integrating these technologies into advanced EFL classesin Benin.

Analysing the collected data unveiled a paradigm shift in how English language learning can occur when ASR and NLP tools are integrated. The results underscore the transformative impact these technologies can have on EFL students' performances, offering a promising avenue for addressing the longstanding challenges faced by traditional teaching approaches. However, it is essential to acknowledge that despite the demonstrated benefits,the full acceptance and implementation of ASR and NLP tools in EFL classes face hurdles. The road ahead necessitates strategic planning, collaboration among stakeholders, and a commitment to overcoming potential barriers. As the study concludes, it emphasizes the imperative for ongoing efforts to bridge the gap between the theoretical advantages and the practical integration of these cutting-edgetechnologies in Beninese EFL education. The outcomes serve as a catalyst for furtherdiscussions and actions aimed at realizing the transformative potential of ASR and NLP in advancing oral communication skills among EFL students in

Benin.

Moreover, reflecting on the outcomes of this study, it becomes evident that the successful integration of ASR and NLP tools requires a multifaceted approach. Beyond technological considerations, attention must be given to pedagogical strategies, teacher training, and institutional support. Addressing these facets will be crucial in navigating the challenges highlighted in this research.

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