Interlingual Interference in Multilingual Students: An Optimality Theory Approach

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Abstract - In Indonesia, multilingualism is a common phenomenon, where individuals regularly switch between multiple languages and dialects in their daily communication. Within this multilingual environment, people often learn several words from their second (L2) or third (L3) language alongside their native tongue (L1). This study aims to investigate the primary linguistic features affected by interlingual interference among multilingual learners at IAIN Langsa and how the principles of Optimality Theory can help explain the observed patterns of interlingual interference in the language learning processes of these students, specifically those in the Arabic Education Department. To address these questions, the research focuses on the language spoken by multilingual learners proficient in Acehnese, Bahasa Indonesia, and Arabic at IAIN Langsa. Data collection involved fieldwork, interviews, and recordings, with five students as the research subjects. The study results indicate that interlingual interference has a multifaceted impact on multilingual learners in the Arabic Education Department at IAIN Langsa. The findings demonstrate that Acehnese phonology influences the development of Arabic words. This is evident in how Acehnese-Arabic speakers modify the final phoneme /d/ to /t/ in three words: [a.had] becomes [a.hat], [ah.mad] becomes [ah.mat], and [mau.lid] changes to [mo.lit]. Multilingual learners may transfer pronunciation patterns, intonation, and accent elements from their native languages into the target language, resulting in pronunciation difficulties and challenges in acquiring the phonological system of the target language.

Keywords: Interference, Multilingual learners, Optimality theory (OT)

I. INTRODUCTION

Universities play an essential role in preparing students to improve their moral and intellectual quality. Especially in the context of the era of globalization, universities have a big responsibility to train students to adapt to this era. The era of globalization is a period where interaction, dependence and mutual influence crosses national borders, influencing international relations. One crucial aspect in preparing students to face globalization by universities is language teaching. Language has a very significant role in facilitating interaction and communication between individuals, groups, and internationally. Therefore, universities often emphasize teaching multiple languages, especially languages with a strong influence, such as English, Arabic, Mandarin, French, etc. However, it should be noted that this phenomenon does not always have a positive impact and can have less favourable consequences.

State Institute for Islamic Studies (IAIN) Langsa, formerly known as Zawiyah Cot Kala Langsa, was established in 1980 as a result of the decision made during the Islamic History Seminar in Rantau, Aceh Tamiang (formerly part of East Aceh). The name "Zawiyah Cot Kala" was derived from the name of the oldest and largest institution of higher education in Southeast Asia, located in Bayeun, East Aceh, in the 4th Hijri century. As a realization of the outcomes of this seminar, and through the initiative of M. Hasan ZZ, B.A. (the head of the Aceh Tamiang Religious Affairs Office at the time), Drs. T.M. Arifin Amin, Drs. Azhar Zakaria (the head of the institution at that time), Drs. H. Zainuddin Saman, and Drs. Idris Harahap, along with support from the government and various segments of society, Institut Agama Islam Zawiyah Cot Kala Langsa was established.

There are four faculties and the Graduate program: Faculty of Education and Teacher Training (FTIK), Law faculty, Ushuluddin and Dakwah faculty, and Islamic of Economic and Business Faculty. The Department of Arabic Education is one of the departments in the Faculty of Education and Teacher Training (FTIK). Students of Arabic education often work on enhancing their proficiency in the Arabic language, including reading, writing, speaking, and comprehension skills. They also learn various teaching methodologies and strategies to effectively instruct others in Arabic, including lesson planning, classroom management, and educational technology.

Related to the background of students in the Arabic education department mostly came from Aceh. So, their mother tongue affected them when they spoke Arabic. Their mother tongue, Acehnese has unique phonological features, including specific consonant and vowel sounds and pronunciation patterns. These students may unintentionally incorporate Acehnese phonological elements into their Arabic pronunciation when speaking Arabic. For example, they might have difficulty with Arabic sounds that do not exist in Acehnese, leading to accents or mispronunciations.

The term "multilingual" or "multilingualism" refers to the use of two or more languages by individuals or communities (Carson, 2016). It encompasses the use of multiple languages, people's proficiency in these languages, and the language dynamics within a specific region or society. This concept differs from "plurilingualism," which pertains to individuals who can communicate in multiple languages. Communication in both monolingual and multilingual environments offers cognitive advantages compared to monolingual individuals. These advantages arise from the fact that bilingual individuals experience benefits in their language development, largely due to their ability to manage their attention and adapt to two distinct grammatical structures (MacWhinney, 2005).

When learning a new language, it is possible for the non-native language (L2) to have a more significant impact than the native language (L1), even if the person is more proficient in their L1 (Puig-Mayenco, E., González Alonso, J., & Rothman, 2020). Multilingual individuals who are exposed to multiple languages simultaneously may face challenges in acquiring language proficiency. However, contrary to the statement, empirical evidence indicates that multilingual individuals have the potential to reach a level of proficiency in multiple languages that is comparable to that of native speakers (Dewaele, J. M., Petrides, K. V., & Furnham, 2018).

On the other hand, the concept of multilingualism relates to a community's ability, where its members can use more than two languages to communicate with each other (Kelly-Holmes, 2014). This phenomenon is evident in linguistically diverse communities in various prominent urban areas in Indonesia. Societal multilingual-

ism, often known as a multilingual society, arises due to various factors, including the geographical characteristics of Indonesia as an island nation with a diverse ethnic population (Wafa & Wijayanti, 2018).

Multilingualism in Indonesia is better known by the term diversity. Multilingualism is the use of more than two languages by a speaker in his social circle with other people in turn. (Weinreich, 1970: 1). Multilingualism can be observed in societies consisting of various ethnic groups, as is evident in Indonesia. In some countries, multilingualism is a recognized policy; for instance, India acknowledges 14 languages in its constitution, the Philippines has six recognized regional languages, and Nigeria recognizes three regional languages. Furthermore, in the educational sector of Indonesia, multilingualism is becoming increasingly common, not only among teachers but also among students.

The linguistic diversity in Indonesia is a result of the numerous ethnic groups found in the country. Indonesia is home to a wide array of languages, with a total of 726 distinct variants. Among these, 719 are local or regional languages that are still actively used today. Additionally, there are two secondary languages without native speakers and five languages for which no known speakers have been identified (Meara, 2009). Furthermore, empirical observations show that a specific demographic living in metropolitan areas tends to use other languages, notably English, as a secondary means of communication. English is a globally spoken language that serves as a medium for communication across diverse cultural and geographical contexts (Ahtif & Gandhi, 2022). This article will investigate the primary linguistic features affected by interlingual interference among multilingual learners at IAIN Langsa and how the principles of Optimality Theory can help explain the observed patterns of interlingual interference in the language learning processes of these students, specifically those in the Arabic Education Department.

Many scholars explored the concept of language transfer in multilingual environments, while a distinct set of research emphasizes that multilingual children have the capacity to recognize and maintain distinct boundaries between the languages they use. Nair (2003) draws the conclusion that in a multilingual environment, bilingual children maintain the distinct phonological characteristics of both English and Hindi. The research conducted by the author focuses on the analysis of phonological characteristics exhibited in English and Hindi words created by a bilingual child throughout a certain timeframe spanning from 18 to 25 months of age. On the other hand, Suhery and colleagues (2019) examined the presence of phonological processes within the framework of Optimality Theory. They explored how a speaker of Pilibhit Hindi-Urdu modified consonant clusters in English loanwords by adding or inserting specific vowels. The research revealed that Pilibhit Hindi-Urdu speakers did not maintain the consonant clusters in English loanwords' starting, middle, or ending positions.

Al-Khresheh (2011) conducted a study on "An Investigation of Interlingual Interference in the use of 'and' as a Syntactic Coordinating Structure by Jordanian EFL Learners". The research focused on examining language interference in the utilization of the word 'and' within the syntactic coordinating structure by Jordanian English as a Foreign Language (EFL) learners. In a different vein, Muta'allim, Sofyan, & Haryono (2020) delved into "Pragmatic Study of Superlative Adjectives in the Kangean Dialect of Madura Language". Their research took a distinct approach, exploring the use of superlative adjectives in the Kangean dialect of Madura with a pragmatic perspective. Meanwhile, Muta'alim, Nawawi, Alfani, Ghaffar, & Wafi (2021) undertook a study titled "Code Switching and Codes Mixing of Sellers and Buyers in Traditional Markets: Case Study of Market Kampong Asembagus Situbondo". This research had a specific focus on code switching and code mixing in traditional markets, rather than addressing language interference in general. Another research by Muta'allim, Alfani, Mahidin, Agustin, & Wicaksi (2021) explored the "Functions of Comparative Adjectives in the Kangean Dialect of Madura Language and Their Impact on the Kangean Community: A Pragmatic Study". The investigation delved into the functions of comparative adjectives within the context of the Madura Kangean dialect, employing a pragmatic approach.

In a related context, Salikin, Muta'allim, Alfani, Hosaini, & Sayfullah (2021) conducted a study titled "Traditional Madurese Engagement Amidst the Social Change of the Kangean Society", examining the involvement of traditional Madura practices amid the social changes in the Kangean community. Wolfsthurn, Robles, & Schiller (2021) conducted a study on "Cross-Linguistic Interference in Late Language Learn-

ers: An ERP study", focusing on cross-linguistic interference in individuals learning a second language at advanced stages, utilizing ERP studies. Yudistira, Muta'allim, Nurcaya, Julhadi, & Pattiasina (2022) explored "The Role of Linguistics and Local Wisdom on Knowing Harmony between Religions at Tana Toraja". The research investigated the influence of linguistic and local wisdom on understanding religious harmony in Tana Toraja. Sofyan, Firmansyah, Muta'allim, Solissa, & Rosikh (2022) investigated the "Islamic Boarding School Linguistic Landscape in The Development of Arabic Language Skills and Islamic Knowledge". This study explored the linguistic landscape in Islamic boarding schools and its impact on developing Arabic language skills and Islamic knowledge.

Sofyan, Yudistira, Muta'allim, Alfani, & Ghaffar (2022) analyzed "The Analysis of Conversational Implicature Between Students and Teachers at Al-Azhar Islamic Boarding School," with a focus on analyzing conversational implicatures between students and teachers in Al-Azhar Islamic Boarding School. This was distinct from the main research, which centered on language interference among multilingual students. Additionally, Irsyadi, Fitriyah, Hanifiyah, & Muta'allim (2022) conducted a study on "Assessing the Potential Values of Local Wisdom in Regional Literature." This research involved evaluating the potential values of local wisdom in regional literature, while the main research focused on language interference among multilingual students. Sofyan, Badrudin, Fitriani, & Muta'allim (2022) explored "Types and Functions of Illocutionary Speech Acts on Interchar-acter Dialogue in Tilik Short Films". The study discussed the types and functions of illocutionary speech acts in the dialogue between characters in the short film Tilik, differing from the primary research that concentrated on language interference among multilingual students.

Tabroni et al. (2022) focused on the role of Arabic as a fundamental epistemology in the scientific tradition of Islamic boarding school education, with a secondary emphasis on language interference among multilingual students. Akmal et al. (2022) delved into Acehnese loanwords and their interactions with other world languages, alongside a secondary investigation into language interference among multilingual students. Sarkisov (2022) studied interlingual interference as a linguistic and cultural charac-

teristic in current online communication, with a secondary consideration for multilingual students. Dumiyati et al. (2023) concentrated on developing an Islamic education curriculum for promoting religious moderation, with an additional focus on language interference among multilingual students.

Julhadi et al. (2023) explored a Malay culture-based local content curriculum in Islamic education, alongside an investigation into language interference among multilingual students. Mahardhani et al. (2023) examined the Kyai's position in rural local democracy based on patronage politics, with a secondary focus on language interference among multilingual students. Yudistira and Muta'allim (2023) investigated code mixing as an anti-political indiscretion among farm laborers, while the primary focus remained on language interference among multilingual students. In summary, the main research theme revolves around language interference among multilingual students with an optimality theory approach. Other studies contribute diverse perspectives, including the analysis of conversational implicature, assessment of local wisdom in regional literature, exploration of illocutionary speech acts in short films, and examinations of linguistic characteristics in various contexts. Each study provides a unique contribution to its respective field. The research on interlingual interference in multilingual students using the optimality theory approach represents a study with highly significant novelty. Thus, the researcher is keenly interested in conducting this research.

Besides, language interference has the potential to appear in different aspects of language structure, which includes phonetic and phonological, morphosyntactic, and semantic elements. This typically occurs under specific social and linguistic circumstances (Thomason, S. G., & Kaufman, 2001). Mose (2021) mentions that phonological system can be varied by phonological processes. In a foundational work by Weinreich in 1957, he referred to the phenomenon of phonetic and phonological interference as "phonic interference." This term encompasses the process in which a speaker while using a second language, perceives and produces sounds that are influenced by the linguistic system of their native language. Some researchers have also conducted studies on phonic interference. Baloch (2013) conducts a study on how Arabic (the mother tongue) interferes with the learning

of English (the second language) in terms of spellings. The author finds that the replacement of 'b' with 'p' and vice versa occurs because of the mother tongue interference. Furthermore, Erwina (2011) conducts a study of language interference in Indonesian pronunciation context and finds that the errors are caused by the mother tongue i.e. Javanese, slang language and foreign languages such as Arabic, English and Dutch.

Nevertheless, Optimality Theory (OT) has emerged as a valuable tool not only in the realm of Phonology but also in various other linguistic fields. Numerous researchers have turned to OT to tackle challenges related to analyzing the internal structure of syllables within words. Initially introduced by Prince, A., & Smolensky (2004) as a framework for examining syllable structure within a specific language, OT rapidly gained popularity and expanded its scope to encompass diverse domains across the field of Linguistics. As suggested by Gussenhoven, C., & Jacobs (2017), Optimality Theory Phonology is commonly perceived as a set of universally applicable constraints organized hierarchically, with unique rankings tailored to each particular language. The process of generating all potential outputs for a given input and subsequently evaluating these outputs to select the most optimal one elucidates the connection between input and output.

II. RESEARCH METHODS

The chosen research methodology is in harmony with the research topics, employing a descriptive qualitative approach. Specifically, it utilizes a case study research design and complements it with descriptive quantification. Qualitative research is a methodological approach that involves a systematic investigation into a social or human issue with the goal of gaining a deep understanding of it. This approach revolves around creating a comprehensive and intricate representation of the subject of study using language, capturing and presenting the unique viewpoints of the individuals involved, and conducting the research within a naturalistic setting (Creswell, 1994).

Applying qualitative research fits this study because it aligns with the fundamental characteristics of qualitative research. In qualitative research, pursuing an absolute "truth" is not the objective; instead, the emphasis is on elucidating, portraying, and scrutinizing evidence (Ansell, J., & Phillips, 1994). Five students from IAIN Langsa's Arabic education department were selected for this research. By consistently recording their spoken language, we identified three specific words: /a.had/, /ah.mad/, and /mau.lid/. The primary objective of gathering these Arabic words and examining their usage in various speech contexts was to analyze the phonological characteristics exhibited by these words in diverse situations. The data was collected using a TASCAM Digital audio recorder and then transcribed into the International Phonetic Alphabet (IPA). Ultimately, at IAIN Langsa, the researcher employed Optimality Theory to investigate the key linguistic aspects influenced by interlingual interference among multilingual learners.

III. RESULTS AND DISCUSSION

This section will show the findings and discussion of a study that aimed to evaluate the generation of L3 words in Acehnese-Bahasa Indonesia-Arabic by learners who mimicked the pronunciation of words in their mother tongue (L1). Furthermore, it investigates the common characteristics of Acehnese pronunciation variations made by multilingual learners at IAIN Langsa's Arabic Department.

1. a. [ahmad̪] satisfied only with the higher rank of the constraint MAX-IO while violated to the highest and lowest *SG and *VOI-CODA.
b. [amat̪] satisfied with the highest and lowest rank of the constraints *SG and *VOI-CODA while violated to the higher MAX-IO.
c. [ahmat̪] satisfied only with the lowest rank of the constraint *VOI-CODA while violated to the highest and higher *SG and MAX-IO.

Consideration of Optimality Theory Tableau in /ahmad̪/:

/ahmad̪/	*SG	MAX-IO	*VOI-CODA
a. [ahmad̪]	*!		*
☞ b.[amat̪]		*!	
c. [ahmat̪]	*!	*	

Table 1: classification of the input and output features of the candidates

In the above tableau, it is generalized that the candidate 'a' is satisfied only with the higher rank of the constraint while fatal violated to the highest and violated to the lowest rank of the constraints. The candidate 'b' is satisfied with the highest and lowest rank of the constraints while violated to the higher. The candidate 'c' is satisfied only with the lowest rank of the constraint while fatal violated to the highest and violated to the higher rank of the constraints. So, based on OT principles, it is evaluated that the candidate 'b' has most of the ranking features similar to the input candidate compared to the candidate 'a' and 'c'. So, we can say that the candidate 'b' is the best candidate as marked as an optimal candidate in Arabic indicated by ☞. There is the hierarchy of the constraints to know the power of OT principles began from

left to right. The left most constraint is most powerful and the right most is the least powerful.

*SG >> MAX-IO >> *VOI-CODA

2. a. [maulid̲] satisfied with the higher and lower rank of the constraints MAX-IO and IDENT-IO (VOI) while fatal violated to the highest *VOI-CODA.

b. [maulit̲] satisfied with the highest and higher rank of the constraints *VOI-CODA and *SG while violated to the lowest IDENT-IO (VOI).

c. [mulid̲] satisfied only with the lowest rank of the constraint IDENT-IO (VOI) while fatal violated to the highest and higher *VOI-CODA and MAX-IO.

Consideration of Optimality Theory Tableu in /maulid̲ / :

/maulid̲/	*VOI-CODA	MAX-IO	IDENT-IO (VOI)
a. [maulid̲]	*!		
☞ b. [maulit̲]			*
c. [mulid̲]	*!	*	

Table 2: classification of the input and output features of the candidates

In the above tableau, it is generalized that the candidate 'a' is satisfied with the higher and lowest rank of the constraints while fatal violated to the highest. The candidate 'b' is satisfied with the highest and higher rank of the constraints while violated to the lowest. The candidate 'c' is satisfied only with the lowest rank of the constraint while fatal violated to the highest and violated to the higher rank of the constraints. So, based on OT principles, it is evaluated that the candidate 'b' has most of the ranking features similar to the input candidate compared to the candidate 'a' and 'c'. So, we can say that the candidate 'b' is the best candidate as marked as an optimal candidate in Arabic indicated by ☞. There is the hierarchy of the constraints to know the power of OT principles began from left to right. The left most constraint

is most powerful and the right most is the least powerful.

*VOI-CODA >> MAX-IO >> IDENT-IO (VOI)

3. a. [ahad̲] satisfied with the higher and lower rank of the constraints DEP-IO and IDENT-IO (VOI) while fatal violated to the highest *VOI-CODA.

b. [ahat̲] satisfied with the highest and higher rank of the constraints *VOI-CODA and DEP-IO while violated to the lowest IDENT-IO (VOI).

c. [ahad̲a] satisfied only with the lowest rank of the constraint IDENT-IO (VOI) while fatal violated to the highest and higher *VOI-CODA and DEP-IO.

Consideration of Optimality Theory Tableu in /ahad̲/ :

/ahad̲/	*VOI-CODA	DEP-IO	IDENT-IO (VOI)
a. /ahad̲/	*!		
☞ b. [ahat̲]			*
c. [ahad̲a]	*!	*	

Table 3: classification of the input and output features of the candidates

In the above tableau, it is generalized that the candidate 'a' is satisfied with the higher and lowest rank of the constraints while fatal violated to the highest. The candidate 'b' is satisfied with the highest and higher rank of the constraints while violated to the lowest. The candidate 'c' is satisfied only with the lowest rank of the constraint while fatal violated to the highest and violated to the higher rank of the constraints. So, based on OT principles, it is evaluated that the candidate 'b' has most of the ranking features similar to the input candidate compared to the candidate 'a' and 'c'. So, we can say that the candidate 'b' is the best candidate as marked as an optimal candidate in Bahasa Indonesia indicated by ☞. There is the hierarchy of the constraints to know the power of OT principles began from left to right. The left most constraint is most powerful and the right most is the least powerful.

*VOI-CODA >> DEP-IO >> IDENT-IO (VOI)

IV. CONCLUSION

This research investigates the common characteristics of Arabic pronunciation deviations made by students of Arabic education department of IAIN Langsa. The investigated sounds are limited to one plosive: /d/. The speech production is observed from continuous speech and single-word production. The results show that out of all of the phonemes produced by the participants, there is one main type of pronunciation deviation made by the participants: devoicing. It can be shown from /ahmaḏ/ to .[amaṯ], /mauliḏ / becomes [mauliṯ], and /ahaḏ/ becomes [ahaṯ]. Finally, .[amaṯ], [mauliṯ], and [ahaṯ] are the optimal output or the winner, which indicate ☞ .

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