

The Role of Internal and External Individual Difference Factors in Bilingual Development: Exploring Highly Proficient Kurdish-English Bilinguals' Perceptions

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Abstract— Drawing on qualitative research, the present study examines the characteristics of seven highly proficient Kurdish-English bilingual adolescents and their perceptions of the role of individual difference factors in bilingual development. Adopting a deductive thematic analysis approach, the collected data from semi-structured interviews were analyzed. The findings indicate that special attention should be paid to both internal and external factors in order for Kurdish-English bilinguals to reach high level of proficiency in both languages. External factors of richness of input, input quantity, language output, and socioeconomic status are crucial for fostering morphosyntactic and lexical skills in Kurdish and English. Moreover, the bilingual learners stated that conducting mathematical and logical problem-solving activities frequently and having high level of language learning aptitude are important predictors of rapid development of bilingual language abilities. In terms of age effects, the bilingual adolescents conveyed that having younger age and earlier start to Kurdish and English learning always lead to better morphosyntactic and lexical outcomes in both languages. To the best of our knowledge, the current study is the first to explore the role of individual difference factors in bilingual development among highly proficient Kurdish-English bilinguals. The paper highlights implications and directions for further research.

Index Terms— bilingual development, internal and external factors, morphosyntactic skill, lexical skill, highly proficient Kurdish-English bilingual adolescents.

I. INTRODUCTION

In recent years, there has been a growing interest in investigating the role played by individual difference factors in fostering language learning skills and abilities (Pfenninger & Lendl, 2017; Schmid & Karayayla, 2020; Unsworth et al., 2019). Of course, these attempts have been witnessed among bilingual language learners in both second language (L2) learning settings (Paradis et al., 2021; Pham & Tipton, 2018)

and foreign language (FL) learning settings (Huang et al., 2020; Pfenninger & Singleton, 2018), and it was concluded that, indeed, bilingual language domains are influenced by linguistic, cognitive, and biological factors. However, there is less consensus about the extent to which these individual difference factors affect bilingual language outcomes. That is, there are still controversies over the degree and nature of the role of the factors in enhancing dual language skills.

In relation to this, the present study focuses on Kurdish-English bilinguals, who, in addition to being exposed to Kurdish at school and in the society, are mainly exposed to English at school. In such a context, in addition to the acquisition of Kurdish as a mother tongue, learners start to learn English from kindergarten since managing daily tasks requires knowing English as a global language. Strikingly, the nature and status of dual language learning have been rarely researched among Kurdish-English bilinguals. More interestingly, to the best of our knowledge, the exploration of the role of individual differences in bilingual language development among Kurdish-English bilinguals is almost nonexistent. Bearing this in mind, the current study is one of the very first attempts towards a better understanding of individual differences and bilingualism in an instructional context in the Kurdistan Region of Iraq. Consequently, the findings from this study are expected to be fruitful and provide better insights into the characteristics of the Kurdish-English bilinguals, especially those that exceptionally perform in an instructional setting.

II. LITERATURE REVIEW

In the general field of Applied Linguistics, there are two broad orientations worked on side by side. One which deals with the issue of finding those similar features and principles that underlie language learning and acquisition processes, and consequently, the aim here is to collect learners under the

umbrella of similarity, and another that attempts to discover those characteristics that are source of difference among learners. The purpose here is, therefore, to investigate the above-mentioned aspects from variability perspective. It is exactly here where the notion of individual differences emerges, sometimes under various names besides individual differences, such as individual factors, learner variables, person variables, and individual characteristics. Of course, these factors include, but not limited to, language input, chronological age, age of onset, general intelligence, language learning aptitude, language output, socioeconomic status, motivation, and anxiety. Although the variability in language proficiency is substantially contributed to the individual difference factors, the role of each factor differs.

In comparison to other dimensions, the definition of individual differences is perhaps the least controversial. In this regard, Dörnyei (2005) defines individual differences as “dimensions of enduring personal characteristics that are assumed to apply to everybody and on which people differ by degree. Or, in other words, they concern stable and systematic deviations from a normative blueprint” (p. 4). As it is clear, when individuals learn a language, be it first language (L1) or L2, there is relative difference among them, and in turn, this degree of variability differs between L1 acquisition and L2 acquisition (Ellis, 2004). Therefore, viewing language learners as a homogeneous group with respect to the level of language mastery is a misconception as empirical findings indicate that language learners vary when assessed on linguistic measures. For instance, neurological studies have manifested that native speakers vary at the neural level in response to semantic and syntactic violations (Newman et al., 2012; Pakulak & Neville, 2010; Wray & Weber-Fox, 2013).

In relation to researching individual difference factors, most of the studies have concentrated on examining the role of these factors in L1 or L2 development (Dörnyei & Skehan, 2003; Hoff, 2006). Until recently, some attempts have been made (e.g., Chondrogianni & Marinis, 2011; Paradis, 2011; Sun et al., 2016) to examine the interaction of the factors and their role in bilingual development. In this regard, Kuo et al. (2020) conducted a study on Chinese-English bilinguals to examine the role of a number of factors in the linguistic and metalinguistic development. The results indicated that having greater amount of input leads to the higher linguistic and metalinguistic abilities. As a result, the study insisted on the importance of the input received outside academic settings. By the same token, Paradis et al. (2020) carried out a cross-sectional study on a number of Syrian-English children bilinguals to find out the possible effect of cognitive, environmental, and age factors on vocabulary and verb morphology abilities in both Arabic and English. The findings from this study revealed that, on the one hand, nonverbal reasoning skills, school English exposure, and paternal and maternal education levels predicted English vocabulary and the accuracy of verb morphology, and, on the other hand, older age, nonverbal reasoning abilities, and maternal education contributed to the Arabic vocabulary and verb morphology abilities. These findings led the researchers to conclude that home language use, the richness of input, and

maternal education level were all influential in enhancing the language skills but with various degrees.

On the other side, in a longitudinal study conducted in an instructional context, Pfenninger and Singleton (2018) investigated the impact of internal and external factors on bilingual language development in Switzerland. It was found that, similar to previous studies in instructional settings (García Mayo & García Lecumberri, 2003; Muñoz, 2008; Xue et al., 2021), environmental factors overshadowed the effects of age of onset. That is, starting foreign language learning at an earlier age does not guarantee a better language development. What is more, it was revealed that creating supportive home environment is crucial to provide advantages at linguistic and cognitive levels. In this regard, the findings provided by Pfenninger and Lendl (2017) suggest further evidence in supporting the role played by external factors, especially input, but extend it in that there are macro-institutional factors, such as variety in curriculum design and practice between schools, that impact language learning immensely.

Of note, there is almost common agreement among scholars and researchers that better bilingual language outcome is at least partially attributed to the perceptions and beliefs of bilinguals while they are in the process of bilingual language development. It is within this realm that the present study was carried out. More specifically, it seems that revealing more about the characteristics and attitudes of those bilinguals that outperform their counterparts while they are acquiring and learning two languages is beneficial for bilingual learners, policy makers, researchers, and parents.

III. THE PRESENT STUDY

The reported data here are from a part of a more comprehensive study. After addressing the gap in the existing research on the relationship between individual difference factors and bilingual development, this study aimed to explore highly proficient Kurdish-English bilinguals' perceptions of individual difference factors and dual language learning in an instructional context. It is noteworthy here that most studies in the literature attempted to investigate the role of individual difference factors in enhancing bilingual language skills numerically using statistical procedures, regardless of the views that the bilingual learners might have had with respect to the individual difference factors and their perception in relation to bilingualism. As a result, exploring the experience of bilingual language learners, especially highly proficient bilinguals, and listening to their views was thought to be useful in broadening our understanding of how individual difference factors shape bilingual development. To achieve this aim, the following research question was addressed:

What are the characteristics of highly proficient bilingual adolescents? How do they perceive the role of individual difference factors in the development of Kurdish/English abilities?

IV. METHODOLOGY

A. Participants

In selecting participants, purposive sampling method was conducted. That is, seven Kurdish-English sequential bilinguals participated in the current study. The bilinguals were 11th graders from three state-funded high schools in Halabja and Sulaymaneyah cities in the Kurdistan Region of Iraq. Further, the bilinguals had a mean age of 17.28 ($SD = 0.49$, range = 17-18). Of this number, six subjects were female and only one subject was male. The main criterion in selecting the participants was that they had to perform outstandingly on vocabulary size, morphosyntactic, and picture naming tasks. In other words, the selection procedure was that the participant showed excellent (above 90th percentile) performance across the tasks. Of note, these tasks were administered to assess the bilingual adolescents' morphosyntax, vocabulary size, and lexical access abilities. In this respect, certain tests were adopted to measure morphosyntactic and vocabulary size abilities in English, namely grammaticality judgment task (DeKeyser, 2000; Jia & Aaronson, 2003) and X-Lex (Meara & Milton, 2003). However, since Kurdish is a low-resourced language, the aforementioned abilities in Kurdish were measured through researcher-developed tasks. Finally, to assess lexical access ability of the participants in English and Kurdish, a picture naming task was carried out in which the pictures were adopted (Snodgrass and Vanderwart, 1980). Of course, the reliability and validity criteria were considered while the tests were developed and conducted.

TABLE 1
Scores of Participants for language Tests

Participants	Kurdish GJT	English GJT	Kurdish X-Lex	English X-Lex	Kurdish RT	English RT
Rawa	70	64	4950	4250	976	1134
Tarza	66	70	4950	4200	417	999
Larin	60	63	4450	3800	690	521
Diya	66	60	5000	3850	912	1274
Lana	64	62	4950	5000	768	1010
Zhina	68	62	4950	3800	718	946
Hana	67	64	4750	4050	770	892

Note. GJT = Grammaticality judgment task as a measure of morphosyntax (out of 72); X-Lex as a measure of vocabulary size (out of 5000); RT = Reaction times in milliseconds as a measure of lexical access ability.

Ultimately, after performing on these measures in Kurdish and English, out of 98 participants, seven of them met the above-mentioned criterion. It is worth mentioning that this cut-off point was arbitrarily established to distinguish the highly proficient bilinguals from the rest of the bilinguals. In addition, it is important to note that, instead of using real names, pseudonyms were used to identify the participants. The performance of the participants across the three tasks is displayed in Table 1.

B. Data Collection

Two semi-structured interviews were carried out with seven subjects. Although unexpected views and topics are possible to emerge during administering this type of interview, a pre-prepared guiding questions are required to direct the discussion. Keeping this in mind, an interview guide was used in the present study to uncover more about the subjects' characteristics, and to learn more about their attitudes and beliefs on individual differences factors and bilingual language development. The interview guide was comprised of twenty items through which a number of topics were put under scrutiny, viz. views on being bilingual, age effects, mathematical and logical problem-solving activities, contributions of reasoning abilities in bilingual language development, parental education level, parents' perceptions on dual language learning, bilingual language input and output, experience with native speakers, and preference of family language pattern. Although this set of pre-prepared guiding questions was used as a guideline to direct the discussion, the interviewees were encouraged to elaborate more on the related issues raised during the interview session.

The questions were directed in the participant's preferred language (Kurdish or English), and they were free to respond in either language. Further, the participants were informed that the interview would be recorded for the transcription purposes, and confidentiality and anonymity would be considered with respect to their data. At the same time, one of the researchers, who managed the interview, made notes while the interviewees conveyed their views. With respect to the time, the interview sessions lasted for three hours.

C. Data Analysis

Regarding the data analysis procedure, the collected data were analyzed using deductive thematic analysis method. In other words, the coding categories were developed a priori. The reason behind using this method was to expose the reality (Braun & Clarke, 2006) through encouraging highly proficient Kurdish-English bilinguals to reflect on the importance of individual difference factors in bilingual development. Of course, the criteria of credibility, dependability, confirmability, and transferability, that are specifically related to qualitative research, were considered.

In this respect, an external researcher was invited to evaluate different aspects of the study. Moreover, around half of the transcripts were coded by an independent coder to increase the dependability feature. By the same token, a sample of data was provided to be evaluated by a research assistant to pave the way for the applicability of the results to a new context.

V. RESULTS

Turning to the results, certain interesting views emerged. In relation to the use of either Kurdish or English in different settings, a number of the participants mentioned that they feel more comfortable when they use English. Tarza, for example, explained her feeling while using English: "Since I am exposing to English language frequently, it is easier to me to express my ideas in English, which, consequently, make me to feel more relaxed." For some other participants, on the other hand, the use

of Kurdish or English depends on the setting and context in which the conversation is taking place, "I almost always use Kurdish at home with my family members, but I prefer employing English with peers and teachers when I am at school," Rawa said.

In terms of the input they receive, the interviewees seemed highly motivated to enhance their bilingual language skills and abilities through educational software programs, which were considered as invaluable sources. Based on the participants' views, these language enhancing sources include, but not limited to, TV programs, online videos, films, language learning software, and podcasts. Diya described this by conveying that:

Because Kurdish is a low-resourced language, I usually watch talented programs in English presented by native speakers of English to improve my English skills, particularly pronunciation ... And while listening, if I cannot understand a certain word, I will try to guess its meaning from context.

Concerning age effects, the interviewees hastily insisted on the advantages of acquiring and learning a language at an early age: "There is no doubt that it would be better to start language learning at an earlier age. I think this is true for the first, second, or third language," Zhina asserted. However, it should be noted here that, when the interviewees were asked about whether this notion is only true for chronological age or it can be extended to the onset age of exposure, they explained that a better language learning outcome is still in favor of those who are exposed to the language earlier. Similarly, the participants insisted that early starters show their superiority over late starters irrespective of the language learning context, that is, whether the language is learnt/acquired in a foreign language context or second language context.

On the other side, the bilingual adolescents had avid interest in performing mathematical-logical problem-solving activities. It is important to remember here that these activities are considered to affect cognitive abilities positively, such as analytical reasoning ability, that eventually impact various language domains and skills. The participants mentioned some of these activities such as playing chess, doing crossword puzzles, solving logic grid, solving Rubik's cube, and solving missing parts. In relation to this, Hana affirmed that she was very eager to engage in mathematical and logical problem-solving games: "I have certain software applications in my mobile phone specifically used to solve logical problems, such as finding missing parts in a chart ... I also have a Rubik's cube and spend part of my spare time on it." The interviewees also mentioned that the games that are related to logical problems are frequently administered at school.

In relation to this, the interviewees were asked about whether they believe in having individual learners with high degree of language learning aptitude and language talents that distinguish them from other learners. Diya expressed her view with certainty in this respect: "Of course, I do believe of having language learners who have special talents while trying to learn a new language. I think all of us have seen this kind of people." However, Hana added her view in this respect by explaining

that being able to acquire or learn a language should not be attributed to language talents alone but, rather, according to her: "There are other factors that accompany language talents when a person successfully learns a language, such as hard working, engaging with the native speakers of that language, and memorizing new words."

With reference to engaging with native speakers, it was concluded that the participants got benefit from various channels to reach native speakers of English. In fact, finding native speakers of Kurdish to hear Kurdish from was not a difficult task for the bilinguals; however, exposing to English input from native speakers in such a foreign language context is more challenging. That is why, based on their claims, the subjects attempted to deploy various strategies and techniques to reach input-providers of English, "... When I was working as a tourist guide at a tourist attraction, I always tried to talk to and receive input from travelers who came from an English-speaking country," Rawa stated. In the same vein, Lana reported that she had maximum motivation to speak to the children of her relatives who were born and living abroad: "I find myself as an opportunistic person regarding speaking to and hearing English input from my relatives, especially their children, who live in an English country." Actually, the interviewees mentioned several other sources to expose to English input, for instance through online video games and English practice software.

Moreover, it was demonstrated that practicing English with non-native speakers was employed by the participants, as Zhina commented, "Because my mother is an English language supervisor in a primary school and has a good command of English, I sometimes engage with her in English to converse about daily routines." Actually, the majority of the participants confirmed the fact that they did not face any challenges in practicing Kurdish since they enjoy having various options to use it: "I never face any challenges to interact in Kurdish because I am surrounded by various sources to converse with native speakers of Kurdish, such as family members, TV programs, social media software, etc." Tarza claimed. Additionally, the subjects explained that they sometimes use code-switching as an effective strategy while they are involved in different tasks.

With respect to having specific hobbies, the interviewees described that they perform certain types of activities for the purpose of amusement. Drawing pictures, crafting, spending time with animals, searching for unusual facts, cooking, reading, memorizing words, writing short stories, designing, and singing were common among the participants. In this respect, Larin explained that she reads daily with vivacious intellectual curiosity and memorizes a certain number of words each day. In line with this, Diya added that she likes spending time on the art of paper folding known as 'origami' and sewing.

Turning to the views of the interviewees' parents on bilingualism and adding a new language to the repertoire, it was noted from the bilinguals' speech that their parents have supported and motivated them to learn an additional language. Tarza, for instance, revealed her perception and the one by her parents on bilingualism by stating that:

My parents and I think knowing more than one language expands my horizon and opens new venues for developing my language skills and my general knowledge as well. More than this, since English is a global language, knowing it, besides Kurdish, has become a prerequisite for finding and getting a job.

In relation to the role of socioeconomic status, there was also a common agreement among the interviewees that the education level of parents plays a significant role in bilingual language development since, according to them, having a higher education level leads to the increase of parental awareness of the importance of being bilingual. Taken together, it was concluded that both bilinguals themselves and their parents have realized and advocated the view that being bilingual promotes cognition, helps in the working world, and paves the way for having multiple understandings about the world cultures. On the other hand, when the participants were asked about whether they prefer learning Kurdish and English simultaneously or successively, there was a common agreement among them that simultaneous learning leads to a more proficient bilingual learner: "In my opinion, learning two languages at the same time from an early age is better and produces an active bilingual learner," Larin said. In relation to family language patterns, there was mixing views since some of the participants preferred one-parent-one-language notion, while some others considered using both languages by both parents as a better choice. There was also a third opinion among the participants, namely exposing to English input via both parents, but exposing to Kurdish through either mother or father.

VI. DISCUSSION

The findings from the interviews revealed interesting aspects of the characteristics of the bilingual adolescents who performed well on the bilingual language outcome measures. In relation to this, the findings confirmed that bilingual language development could be driven by various internal and external factors. One of the factors the participants considered to be influential was input. Regarding Kurdish language development, it was realized that the bilingual learners seem not to face any real obstacle with respect to rich Kurdish input environment. For learning and fostering English language skills, however, the scenario appears to be different. That is, due to the lack of face-to-face interaction with English-native speakers, the interviewees explained the fact that they get benefit from other means, such as media channels, software applications, and reading books, to fill this gap. Despite the fact that human interaction might be the best option for language development (King & Fogle, 2006), using other sources seem to leave their traces as well based on the findings of the present study. In relation to the age effects, it was revealed from the interviewees' perspectives that there is an apparent advantage of earlier start of language acquisition and learning, irrespective of whether it is the acquisition of first or second language. Of course, for foreign language acquisition, this is in contrast to the findings in the literature since research so far shows that early starters of foreign language acquisition outperform late starters

(Ellis, 1994; Harley, 1998; Muñoz, 2008; Singleton, 1995) due to their linguistic and cognitive maturity.

In relation to general cognition, the participants mentioned that they perform certain types of activities thought to be useful to improve cognitive abilities. It is worth mentioning that practicing this sort of activities was one of the most common routines the participants insisted on. However, it appears that the subjects are unaware of the interaction between bilingualism and cognition since, based on some studies in the literature (Bialystok et al., 2004; Klein et al., 2013), there is a positive relationship between bilingual development and cognitive constructs. Additionally, it was revealed from the discussion that the bilingual adolescents mostly practice their English with non-native speakers of English, especially their family members. This is in line with the findings of Unsworth et al. (2019) who propose that what matters most for the development of an additional language is the degree of non-nativeness in the input. Of course, in terms of using Kurdish with native speakers, it was found that the learners do not encounter any problem. Of note, the participants confirmed that they use code-switching as a strategy to enhance their fluency.

Moreover, the bilingual learners expressed their views about the fact that, on some occasions, they try to learn languages through entertainment. Perhaps, this is because the bilingual adolescents want to wipe out their negative attitudes towards language learning while they are in the process of bilingual language development. This finding is on a par with that of Ghafor et al. (2019) who also found a key role played by entertainment materials in the process of learning English as a foreign language among university learners. With respect to the effect of bilingualism, it was noted that the parents of the bilingual adolescents were well aware of the importance of learning more languages. More specifically, on the one hand, it was found that the parents of the bilingual adolescents realize the importance of knowing additional languages, especially English, besides Kurdish to compete in the marketing world. On the other hand, it was found that the parents support and motivate their children to learn additional languages since it leads to the increase of cultural awareness. Finally, on the family language patterns, there seems to be mixing perceptions since some of the participants support the notion of one-parent-one language, while others advocate different patterns, such as using both languages by both parents.

CONCLUSION AND LIMITATIONS

The findings of the current study provide further evidence that the crucial role played by individual difference factors in bilingual language improvement is undeniable. However, the effect of the individual difference factors should not be attributed to one set of factors over the other. In other words, both internal and external individual difference factors contribute to the development of the skills in Kurdish and English. Therefore, the role of the individual difference factors needs to be viewed from a continuum perspective, and their contribution is the matter of degree. More than this, based on the data of the present study, while the internal characteristics possessed by the bilingual learners need to be taken into

consideration during the process of bilingual language learning, the external factors, such as familial support, should be taken into account as well. In addition, there is also an urgent need for raising the awareness of the bilingual learners and their families regarding the role of age of onset and chronological age since previous findings from instructional settings reject the view that earlier exposure to a second language and starting learning an additional language at an earlier age lead to better and faster language learning outcomes.

On the other hand, the present study had certain limitations. Among them, the perceptions of only highly proficient bilinguals were examined. Thus, in addition to interviewing highly proficient bilinguals, investigating attitudes of those bilinguals who performed poorly across bilingual language tasks seems to be revealing as well. Furthermore, knowing views of the bilinguals' parents and their siblings is undoubtedly useful to a better understanding of the relationship between individual difference factors and bilingual development. At the methodological level, with the employment of interviews, using other qualitative-related methods, such as classroom observation and diaries to examine a larger number of highly proficient bilinguals, seems to lead to more interesting findings.

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