


Original Article

Determining Lexical Competence to Measure Language Progress in Urban Bi and Multilingual Preschool Children

Amina Asif Siddiqui

College of Speech, Language & Hearing Sciences
Ziauddin University, Karachi – Pakistan

 <https://orcid.org/0000-0002-9696-225X>

 amina.siddiqui@zu.edu.pk

Shahid Ali (Corresponding Author)

College of Speech, Language & Hearing Sciences
Ziauddin University, Karachi – Pakistan

 <https://orcid.org/0000-0002-8218-0070>

 spe-shahid-slpa@hotmail.com

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Author Biographies

1 Amina Asif Siddiqui is currently an Associate Professor & Principal at the College of Speech, Language & Hearing Sciences, Ziauddin University in Karachi – Pakistan. Her Ph.D. in Speech and Hearing is in progress at Universiti Kebangsaan Malaysia in Bangi, Malaysia.

2 Shahid Ali is currently an Assistant Professor at the College of Speech, Language & Hearing Sciences, Ziauddin University in Karachi – Pakistan. He obtained his M.Phil. Degree in Education from Hamdard University in Karachi – Pakistan and Master's Degree in Audiology and Speech Language Pathology from the Department of Special Education, University of Karachi in Karachi – Pakistan.

ABSTRACT

This study examines the lexical growth of pre-schoolers in bilingual/multilingual Pakistani community. These children are immersed in English (L2/L3) at playschool while being exposed to their mother tongue (L1) and Urdu (L1/L2) at home. The primary goal of this cross-sectional quantitative study is to ascertain the lexical advancement among children across four age groups, evaluating them on conceptual criteria, and employing a tool specifically developed for assessing lexicon. A simple random selection of 100 typical bilingual and multilingual children were recruited from mainstream playschools. Each child was screened with a Lexical Skills Screener designed for bilingual/multilingual individuals, with 255 culturally relevant images that assessed their morphological and semantic abilities. The participants identified pictures using English and Urdu, rather than their native language. An observable increase in lexical competence was noted across age groups. Specifically, children aged 2 to 2.11 years identified 40.7% of the pictures, those aged 3 to 3.11 years identified 49.02%, and those aged 4 to 4.11 years identified 62.75 % of the total images. In early childhood, children effortlessly pick up multiple languages. Among bilingual/multilingual children across the three age groups, vocabulary growth across each language is uneven.

Keywords: *Bilingual children, Language progress, Lexical competence, Multilingual children, Preschool children*

INTRODUCTION

Primary Education and Languages of Pakistan

In Addition to Urdu, which is the official language of the country, Punjabi, Sindhi, Hindko, Balochi, Pashto, Saraiki, and Brahui languages are spoken in Pakistan's four provinces. Urdu and English hold official status in Pakistan (Shamim & Negash, 2007). English gained prominence on the socio-political landscape following its introduction by the British during their colonization of the areas in the sixteenth century (Mahboob & Ahmar, 2004). Educational institutions in Pakistan that utilize English Language as the primary source or medium of communication and instruction are often perceived as superior as or better than the traditional languages. Pakistani Urban schools give Urdu typically priority as subject, while the native languages of Pakistan being generally less integrated in the curriculum (Fareed et al., 2018).

Across the Indian subcontinent, in many urban communities, including Pakistan, English serves as the primary language of instruction during the early stages of preschool education (Shamim & Rashid, 2019). Children attending these institutions typically come from multilingual backgrounds, speaking English in their class and school environment, but native Pakistani language and Urdu at home. For some, exposure to English begins only upon enrollment in school, without any exposure at home in early childhood (Mahboob, 2017). Parents frequently believe that

having a strong command of the English language is beneficial for their children (Akhtar, 2013). Success in the academic journey in Pakistan depend on the child's capacity to read, write, understand and speak English fluently (Manan & David, 2014).

Bilingual/Multilingual Environment and Children's Language Development

Children raised in bilingual or multilingual environments begin learning two or more languages at the same time by the age of 3 years, or later (del Pilar Agustín-Llach, 2019). For the child's speech and language development, the 1st three years of life are essential. Exposure to multiple language during this critical time fosters cognitive, social & communication skills, leading to the speech patterns resembling those of native speakers in all acquired languages (Hartshorne et al., 2018). While by the end of early childhood, children typically acquire adult like communication skills (Habibi et al., 2017), through adolescence and into adulthood with language proficiency continuing to evolve in the area of pragmatics, syntax, and lexicon (Nippold, 2000).

The dynamic multilingual society of Pakistan thrives on households primarily conversing in one of the local languages such as Sindhi, Punjabi, Saraiki, Pushto and Urdu (Zaidi & Zaki, 2017). Throughout preschool and beyond, Urban Pakistani children are exposed to multiple languages,

including English. Although Urdu Language holds official status in Pakistan, it is not always the only language spoken within a home (Manan & David, 2014). A child's early experiences at home and in the school environment significantly influence their entire language acquisition & development as well as conceptual growth. Parental communication patterns differ in Pakistan, some parents predominantly communicate with their children in their mother tongue (L1), while others may communicate in L2 (Urdu). Additionally, the language used in the society may differ from the family's native language, and children may also encounter and learn a third language L3 (English) when they attend school (Manan et al., 2017; Shamim, 2008; Shamim & Negash, 2007).

Children's Lexical Development

The acquisition of two languages by children is just as natural as their acquisition of one language (Hoff & Core, 2015). They acquire language skills by being exposed to new words in their surroundings. Sociocultural and linguistic variables are important in comprehending the meaning of these words. The richness of their experiences significantly influences the development of children's language abilities. For instance, youngsters who hear stories read aloud to them by their parents often demonstrate higher vocabularies and more advanced communication skills. Therefore, the calibre and extent of linguistic interactions offered by the caregivers have the potential to enrich the children's' lexical abilities in bilingual or multilingual situations (Bedore & Peña, 2008; Hoff & Core, 2015). Participating in activities like listening to stories, watching movies, or encountering thrilling events contributes to enriched learning experiences, aiding in the assimilation of new vocabulary. Quick incidental Learning (QUIL) and fast mapping imply that the children are capable of integrating new words into their vocabulary following short-term exposure (Brackenbury & Fey, 2003).

As children develop their language skills, they incorporate new vocabulary into their lexicon. Lexical development pertains to the expansion of words and their connotations within a child's language. Acquiring verbs may present a more significant challenge compared to acquiring nouns, which encompass labels given to animals, locations, objects and people name (Kelley, 2017). Children pick up new words quickly

through formal teaching methods and organized activities for learning also (Gray & Brinkley, 2010). Children who are concurrently learning two or more languages frequently start code-switching between them as early as the age of two years (Estabrooks et al., 2020). When encountering challenges in one language, bilingual individuals often opt for a word from the other language where they have better mastery, demonstrating improved pragmatic expertise and sociolinguistic flexibility. The code-switching among bilingual children is common illustrating good cognitive-linguistic ability (Pert & Letts, 2006).

Compared to bilingual children, who speak 2 or more languages, monolingual children usually have a larger vocabulary in one language (Altman et al., 2018). As the result, the larger collection of vocabulary allows the monolingual children to use language more skillfully and proficiently, which manifests better communication skills. Their research also indicates that monolingual children who speak English language have a distinct vocabulary which contributes to proficient in English.

Bilingualism / Multilingualism and Clinical Challenges

Pakistani children raised in bilingual or multilingual households may frequently exhibit varying performance on formal language assessments in comparison to monolingual children, potentially resulting in misinterpretations. Some of these children may have an undetected language impairment or disorder (Stow & Dodd, 2005). Children with bilingual or multilingual background whose language development is delayed due to underlying language disorders may often remain unnoticed by caregivers, educators, and healthcare professionals (Nayeb et al., 2021). The limited research is available on the initial and subsequent language acquisition of bilingual children (Mahboob & Ahmar, 2004). Their study, focusing on lexical development in a group of bilingual children, recognizes their adeptness at language acquisition within their surroundings as "intact language processing." However, they note that language assessment instruments may not consistently distinguish between bilingual children encountering challenges in acquiring their language as opposed to their secondary Language.

Bilingual / Multilingual Societies and Children's Language Assessment

In comparison to their monolingual English speaking peers, bilingual children of immigrants in the United Kingdom (UK) underperformed on standardized English assessment (Stow & Pert, 2006). Therefore, Bilingual or multilingual children's must be evaluated in the languages that they predominantly speak in order to identify how severe any linguistic disability (Bedore & Peña, 2008; Stow & Dodd, 2005). This technique helps to distinguish language differences from underlying language disorders linked to neurodevelopmental problems (Armon-Lotem, 2018), rather than language differences resulting from exposure to a multilingual environment, which may have a native language (L1) a societal language (L2) along with English as a second language (ESL) or English as a language of learning (ELL) in preschool.

Speech-Language pathologists / therapists experience challenges in identifying and diagnosing bilingual children with developmental language disorder (DLD) or specific language impairment (SLI) (Bonifacci et al., 2020). Therefore speech language pathologist/therapist stress the importance of obtaining language detailed information about the children, thus this includes asking parents for a detailed developmental history, observing the children's socio-communicative behavior in the surrounding that are natural and using standardized evaluation instrument. But drawing erroneous inference could be possible if there were no language evaluation tools available in the 1st language of the child (L1) (Stow & Pert, 2006).

When Evaluating the sequentially bilingual children's proficiency and lexicon who are solely exposed to English after beginning preschool is inappropriate when using reference to student vocabulary examinations and language evaluation tools established in people who speak English. Children's exposure to English language (L2 or L3) in preschool, prior to the full establishment of their native language (L1), could potentially affect the vocabulary they learn in these two languages (Kan et al., 2020). Additionally, the result of these test cannot be accurately compare with monolingual children who undertake the similar tests (Anaya et al., 2018). Consequently, the outcome of an assessment's validity or accuracy could be significantly impacted when employing assessment instruments standardized in either of

the language these children speak to evaluate SLI or DLD in bilingual children (Kan et al., 2020)

A comprehensive and detailed approach developed for evaluating the children's language development, focusing on three main areas: (1) development of vocabulary and lexicon, (2) development of grammar and morpho-syntactic development (3) development of narrative skills (Bedore & Peña, 2008). This proposal arose from the recognition that various factors impact lexical development, including children's proficiency in their native language affecting the acquisition of new words in a second language. In addition, parental education, socioeconomic status, and sociocultural experiences all play pivotal role in shaping children's world knowledge, thereby impacting how children's lexicon develops the idea and meaning connected to new words. Consequently, these factors serve as crucial indicators to consider during assessment.

When evaluating the linguistic competency of bilingual children, conceptual evaluation is more likely to give a reliable diagnostic outcome. Conceptual vocabulary refer to the bilingual children's capacity to identify images by naming them in whatever language that they are fluent in or by explaining the characteristics or uses of the objects that are shown (Bedore & Peña, 2008; Bedore et al., 2005). Assessing lexicon skills gives insights into children's over all linguistic capabilities and offers a glimpse into their metalinguistic abilities, pragmatics, syntax and tendencies toward code-switching. The assessment tools designed for monolingual populations might be less effective in finding language issues in young bilingual individual. Historically, vocabulary test have been utilized to identify early indicators in children with SLI or DLD (Bonifacci et al., 2020). Kia Ming Vocabulary Test developed with the express purpose of assessing vocabulary development patterns in bilingual children who speak Cantonese and English and may be suspected of having a language impairment (Kan et al., 2020).

Similar to this, the Lexical Skills Screener for Bi/Multilingual is a screening tool that was especially created and tailored for this study to assess lexical development across the languages spoken by the participants. It is culturally and linguistically sensitive. Inspired by the 'Vocabulary Size Test' (Nirattisai & Palanukulwong, 2016), the researchers created this screening tool consisting

of 337 internet-sourced images covering various morphological and semantic categories that were randomly selected, the pictures in the each category were age- and culturally-appropriate, making them suitable for the children in this study. This Microsoft PowerPoint presentation-style program was installed on laptops and PCs to evaluate the children's lexicon-based linguistic abilities.

In this study, primary main focus was on lexical development and the effects of bilingualism or multilingualism on language development in normally developing children attending playschools. The assessment employed the Lexical Skills Screener for Bi/Multilingual, which included linguistically and culturally appropriate imagery created to correspond with the study's target audience. In order to facilitate an evaluation of their conceptual vocabulary, children were urged to identify these images using any language in which they were comfortable in or to characterize them according to their characteristics or purpose. The creation of an international research framework for the study of bilingual and multilingual children's language and speech acquisition is desperately needed. This initiative, as advocated (Kan et al., 2020), would help to decrease the number of cases of bilingual and multilingual children being over or under identified as having a language impairment. It acknowledges the latter group's significant diversity (Grech & Dodd, 2007). It advocated that the implementation of dynamic assessments of children's lexical skills to detect language impairments effectively (Petersen et al., 2018).

The literature on the development of language in children with development and those with DLD in multilingual communities is limited. This study aims to investigate the lexical growth of bilingual or multilingual children, aged 2 to 2.11 years, 3 to 3.11 years, and 4 to 4.11 years, across the children native language Urdu as a 1st or 2nd language (L1 or L2), and English as an second or third Language (L2 or L3). It evaluates vocabulary development and lexical skills in naturally developing bi / multilingual preschool children to evaluate linguistic growth. Additionally, the study seeks to explore whether early childhood exposure to two or more languages could possibly expose a DLD. Furthermore, it aims to identify any notable variances in children's lexical development between the ages of 2 to 2.11 years old across

all the languages they exposed to. Taking into account that English is the official language of Pakistan, this study assesses both spontaneous conceptual vocabulary in English as a 2nd language (L2) or 3rd language (L3), as well as in their native or 1st language (L1) and Urdu as a 1st language (L1) and 2nd languages (L2), Utilizing SLS of Bi / Multilingual. In future, the SLS for competency of bi / multilingual may eventually be developed into a standardized Screening instrument assess young pre-schoolers' language development

Objectives of the Study

Primary Objectives of the Study

The purpose of the study is to determine the lexical development of pre-schoolers with typical development who speak more than one language by utilizing a culturally and linguistically relevant instrument.

Secondary Objectives of the Study

- To determine the lexical growth in bilingual and multilingual children across three age groups: 2 to 2.11, 3 to 3.11, and 4 to 4.11 years.
- To assess language development by scoring the children's responses conceptually.
- To devise a linguistically and culturally appropriate instrument for assessing the vocabulary skills of multilingual and bilingual children in Pakistan.

Research Questions

- Is lexical growth consistent across all languages to which the child is exposed within the three age groups of 2 to 2.11, 3 to 3.11, and 4 to 4.11 years?
- Does the lexical advancement across languages serve as an indicator of normally developing language skills in multilingual or bilingual children?

METHODOLOGY

Research Design

The research comprises a quantitative cross sectional cohort investigation carried out during a period of one year among a diverse random sample of multilingual and bilingual children between the ages of 2 and 4.11 years. English was the medium of teaching in the urban mainstream

playschools where the research was carried out.

Participants and Recruitment Process

An online calculation was utilized to determine the sample size, which is provided by the Australian Bureau of Statistics – Australia (ABS, 2024). With the population of 2200, a 95% confidence interval, a proportion of 0.8 and a confidence interval of 0.03919 and a relative standard error of 4.90. As a result, one hundred (100) was chosen as the study's sample size (n). It is recognized that socio-economic factors can influence the children's language abilities from multilingual or bilingual families' language skills (Saneka & de Witt, 2019). Consequently, the investigator deduced that the contributors belonged to the higher socioeconomic status or upper-middle strata, based upon the interview with the parents. The playschools involved that were part of the research were located in affluent metropolitan regions. However, the research's data collection tools did not gather information regarding the socio-economic status (SES) of the children.

The selection of playschools was deliberate as they frequently referred infants and young children to the clinic for speech-language & hearing assessments and evaluations, indicating an understanding of the significance of early intervention for communication impairment. The researcher categorized the bilingual or multilingual individuals participating in the study into three groups: (1) 2 to 2.11 years, (2) 3 to 3.11 years and (3) 4 to 4.11 years. In this study, the selected playschools, serving as research sites, enrolled participants with a range of acquired and congenital conditions, such as cognitive disorders, intellectual, physical, hearing, visual, and , language, along with normally developing children in the same classrooms. Therefore, the playschools were recognized as exemplars of mainstream educational establishments that advocate for inclusivity.

The recruitment process extended over approximately six weeks and necessitated two phases. As the study took place in a city which is located at the coast known for its high humidity and allergens, which often led to upper respiratory tract infections and allergies in youngsters, the researchers opted to enlist slightly over a hundred children. Given the vulnerable nature of the participants, the researchers sought approval from the Research Ethics Committee (REC) and

the Clinical Research Committee (CRC) at their university before initiating the research study. Furthermore, the parent's full informed permission was obtained prior to enrolling their youngsters in the research. The researchers secured a formal agreement letter from the designated playschools for their involvement in the research. Parents of the potential participants were informed by the respected school administration about the study's particulars and their agreement with the researchers before seeking their participation. Following this, researchers dispatched consent forms along with letters to parents of the potential participants, who were given complete autonomy to make a decision whether they wanted their children to take part in the study. Their decision was not influenced by the school or the researchers in any manner.

In the initial phase, 395 parents agreed to take part in the study alongside their children from different four playschools. However, out of the 118 children initially recruited with complete forms, 21 either did not undergo the audio logical evaluation or were unwell due to sickness or flu or cold. Consequently, only 97 kids were enlisted in the first stage. Among these, only 79 assessment were completed utilizing the Screener tool evaluating the Lexical Skills. The Responses from 18 children were not considered because they became uncomfortable or upset, or left during the assessment and went back to the teachers. The teachers stated that some among these eighteen kids had recently joined the school and were still adjusting to the classroom environment. To reach the target sample size of 100 children, additional participants were recruited

Following the conclusion of the first phase, two weeks later, the second recruitment phase was begun. The goal of the researcher was to include a total of one hundred (100) children in targeted sample, since many parents hadn't submitted their child's developmental history form during the 1st phase. Consequently, thirty three (33) parents agreed to take apart in the 2nd phase of study, but only twenty two (22) children were enrolled after their vision and hearing assessment. Only one child among the selected sample did not undergo screening test of the lexical skills. Consequently, the study achieved a sample of 100 children, with participants' lexicons screened using the Screener of Lexical Skills (SLS) for bilinguals individuals. There 26 children ages 2 to 2.11 years old, 57

children ages 3 to 3.11 years old and 17 children ages 4 to 4.11 years old among all the participants.

Inclusion-Exclusion Criteria

Children were carefully selected for participation in this study based on rigorous inclusion criteria designed to eliminate any physical, pathophysiological, neurodevelopment, social, or psychological factors that could impede children's attainment of typical language development. Each child naturally experienced exposure to two or three languages, including their mother tongue or native language (L1 as a first language), Urdu (which could serve as either L1 or L2), and English (which could serve as their second (L2) or third (L3) language), based on how many languages children were exposed to and how they used them. Gender was not a factor considered for inclusion. Inclusion criteria encompassed infants born via typical pregnancies, normal delivery, or scheduled Cesarean sections, with no notable history of prenatal, perinatal, or postnatal illness or accidents. Children belonged to either joint household or nuclear family setup, where members of the family were multilingual. The participants' native language (L1), also referred to as the mother tongue, termed as the "other" language here, might have been used by other relatives and parents. Family structures consisted of children, parents, grandparents, aunts, uncles, and cousins, living together in either a joint family setup or separately in a nuclear family (Pert & Letts, 2006). These children have registration at four playschools that provided level for Pre-Kindergarten, Kindergarten and Nursery. These playschools cooperated with the researchers by providing the research sample of bilingual / multilingual children kids for the main research (n=100) as well as for the preliminary research (n=35). They offered play-based learning activities as part of their curriculum.

Procedure and Tools of Assessment

A checklist and a questionnaire were provided to the parents who agreed to take part in the research. A developmental checklist from birth to five years was used to evaluate the cognitive, motor and language milestone of the children, which is developed by the Early Childhood Development Centre (ECDC) in 2006. The questionnaire was used to collect data on social skill, visual acuity, hearing, history of the child's birth and state of

health from birth, it also collected information on the language spoken at home. The data provided by parents about their children's development contributed to thorough evaluation of the children's language skills (Pua et al., 2017).

The family structures, including nuclear and joint families, were considered, reflecting the prevalence of extended family dynamics in Pakistani society, even when children reside in nuclear households. Screening for hearing impairment was crucial, given its significant impact on speech & language development in children. The researchers conducted hearing screenings using a portable audiometer, assessing the Pure Tone Audiometry (PTA) at 500 Hz, 1000 Hz, and 2000 Hz frequencies. Children exhibiting symptoms of upper respiratory tract infection, a cold, or cough were excluded from hearing tests and this study. Parents were advised to have their child's hearing assessed once the symptoms subsided. Although eye testing was not formally evaluated, parents indicated within the questionnaire that their children's vision was normal. The researchers chose typically developing youngsters from bilingual and multilingual households with normal hearing sensitivity by using information from the parents and the children's hearing evaluations. A pilot study involving thirty-five (35) children was conducted before the main research phase began.

Developing an Assessment Tool to Measure Children's Lexical Skills

The images included in the SLS of bilingual / multilingual were designed to evaluate each child's lexical across their spoken languages. These images encompassed various semantic categories such as body parts, fruits, clothing, animals, vegetables, furniture, items use in kitchen, washroom items, eating utensils, breakfast items, hot items, cold items, electrical items, verbs, places, two-dimensional shapes, adjectives (colours, size, quantity), positions, and degree (comparative and superlative). The quantity of articles in each category varied. Bilingual children are known to switch between languages and may describe objects based on their attributes when unable to recall their names, a phenomenon noticed in the study's subjects throughout data collection process. With a total of 255 images, the children were allowed to label the picture in any expressive language they were acquaintance with. If they were unable to give the name, they might instead

describe the photo by their purpose, setting or characteristics; they would then be asked to select “yes” or “no”. A correct “yes” response for naming the pictures was considered a valid response, contributing to the child’s conceptual score. If the child indicated not knowing the images or picture’s name, a “no response” was recorded for that particular item.

Due to its multilingual origins, Urdu has loanwords from Arabic, Persian, Turkish and Sanskrit. According to Kan et al., (2020), loan words typically take on characteristics of the language they are borrowed into. Within the Lexical Skills Screener for Bi/Multilingual individuals, there are 66 loanwords from English that could be categorized under ‘Urdu,’ as they adopt Urdu’s morphological traits when utilized by native Pakistani population. For instance, the plural term of the English noun [bas] transforms into [basein], demonstrating the use of the nasalized plural morpheme /ein/, which is the English equivalent of /s/, at the end rather than /iz/. However, the identification and examination of loanwords from other incorporated languages were beyond the scope of this study. To reduce the distraction, each child received individualized evaluation from three speech & language therapists. The therapists positioned themselves facing the child in the classroom while their classmates engaged in recreational activities or music sessions. Utilizing Microsoft PowerPoint, each slide on the laptop had a group of six or seven images displayed. To sustain the children’s focus on naming the images displayed on laptop, they were periodically rewarded with toys. Every piece of information was manually entered into forms and then safely moved to the Microsoft Excel document that was kept on a separate sheet saved on a special USB drive. The statistician examined the gathered data after it was placed in a different folder.

Pilot Study

An initial study was conducted to evaluate the visual credibility of the tool’s images. Through purposive sampling, thirty-five children aged 2 to 4.11 years, drawn from 2 playschools catering to normal developing bilingual or multilingual children, participated in the pilot study to assess

the children’s level of familiarity with the images used in the screening tool. The sample consisted of twelve children each in the 2 to 2.11 years and 3 to 3.11 years old age groups, and thirteen children in the 4 to 4.11 years old age group. The children were allowed to label the images in any language they were familiar with; named pictures were entered on the form as “yes” responses and while unnamed images were marked as “no” responses. During the pilot study phase, pictures that the kids described but did not name were also regarded as “no” answers. After the pilot study, 255 images in total were selected based on the kids’ replies with the highest frequency. Eighty-two pictures that remained unnamed, indicating unfamiliarity, were removed from the screening tool. The final image selection for the SLS of Bilingual and multilingual individuals was then reviewed by two preschool teachers to confirm their appropriateness, resulting in the end tool keeping all 255 images.

RESULTS & FINDING

The analysis involved examining the responses of the 100 (n) children. It was noted that some children required more time to identify and name the 255 images compared to other children. The analysis focused on children who made an effort to respond to all the images in the screening tool, either by naming them or describing their function, position, or attributes, thereby generating a conceptual score. Every one of the 100 kids that took part in the study spoke in an intelligible and clear speech and were easily understood by both the researchers and the preschool teachers. Some of the children exhibited typical phonological patterns for their age, such as fronting, where the sounds /t/ and /d/, respectively, were used in place of /k/ and /g/. A further prevalent feature noted was the replacement of alveolar phonemes /t/ and /d/ with interdental /t̪/ and /d̪/. Additionally, a few children demonstrated stopping, replacing fricatives or affricates with stop plosives. However, this study did not involve on the children’s particular speech traits. Consequently, any responses given by the children, even if spoken with partially unclear speech, were considered acceptable for the purposes of the study.

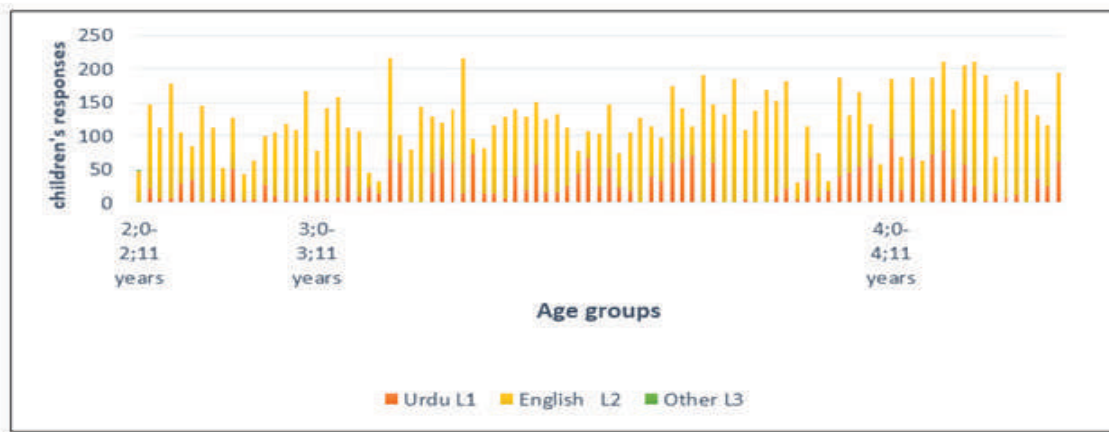


Fig. 1. Responses of all 2 to 2.11 years, 3 to 3.11 years & 4 to 4.11 years old children in other language, Urdu & English

Table 1

Overall average response scores amongst age groups

Response Scores	Age Category			p-value
	2 year	3 year	4 year	
	Mean (SD)	Mean (SD)	Mean (SD)	
	103.61 (44.203)	125.02 (43.782)	159.59 (48.579)	<0.0001*

*Significant variation at the $\alpha < 0.05$ level
Test of One-way ANOVA

Statistical analysis results reveal that the youngsters exhibited multilingual and bilingual abilities, utilizing their native / mother tongue or 'other' language as 1st Language (L1), Urdu as 1st Language / 2nd Language (L1/L2), and English as 2nd Language / 3rd Language (L2/L3), depending on their exposure. Detailed performance data for each participating child can be found in Table 1 in the attached appendix. Additionally, Figure 1 shows how all kids answered in Urdu, English, and whatever other languages they used to recognize the photos. Among the participants, 81 kids employed L1 as an Urdu and L2 as English, while 8 kids utilized L1 as another language, L2 as Urdu Language, and L3 as English language. It's interesting to note that 11 kids replied only

in English language (L2) even though the Urdu language was their first language. Nine of them were in the youngest age group, which is 2 to 2.11 years old, while the other two were in the 3 to 3.11 age range. Remarkably, not a single youngster named the picture only in their mother tongue, only in Urdu. In contrast, all children, regardless of age group, named at least a few pictures in English. It's worth mentioning that the expectation wasn't for children to name every image in every languages they knew, hence the lexical proficiency in each language remains undetermined. Nevertheless, the consistent lexical growth observed across age groups suggests the absence of any language impairments among the children.

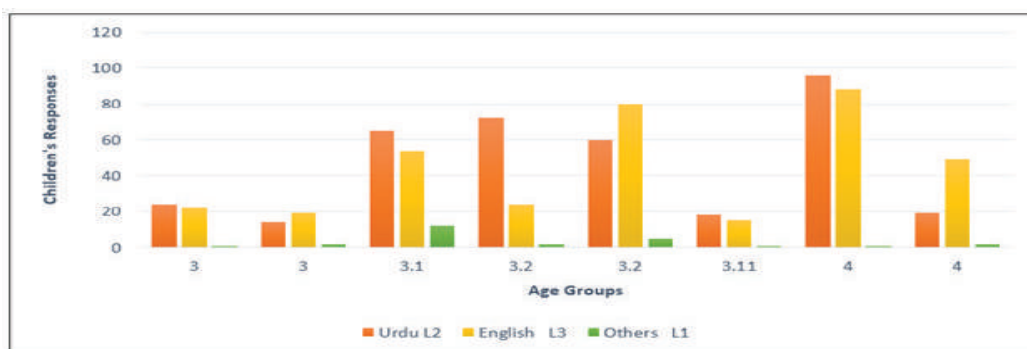


Fig. 2. Responses of eight 3 to 3.11 & 4 to 4.11 years old children in other language, Urdu & English

As depicted in fig 2, six children ranging from the age 3 to 3.11 years and two aged between 4 to 4.11 years responded by recognizing images in three (03) languages: Urdu (L2), English (L3), and the native language or 'other' (L1). Among the age range 3 to 3.11 years, the frequency of picture naming in Urdu and English was nearly identical, each comprising 16% and 15% of responses,

respectively, while 2% of the images, however, had names in the 'other' language. Conversely, between 4 to 4.11 years age range, there was a notable increase in the lexicon, with a higher proportion of pictures named in Urdu (33%) compared to English (23%), and a decrease to 1% in the usage of the 'other' (L1) language.

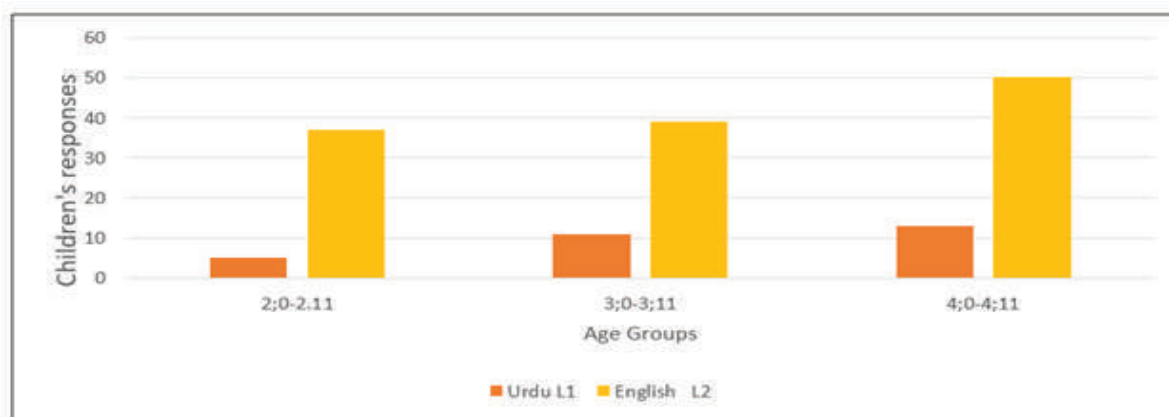


Fig. 3. Comparison of Children's responses in Urdu and English for all age groups

As depicted in the Fig 3, 81 children participate by identifying images in both languages L1 and L2, comprising 17 children 2 to 2.11-year-olds, 49 children 3 to 3.11-year-olds, and 15 children 4 to 4.11-year-olds. Among the youngest age bracket which, includes 2 to 2:11-year-olds, a significant proportion of words were in English, constituting 37% compared to only 5% in Urdu. In the 3 to 3.11 age group, the English lexicon increase by a significant 6% alongside a modest 2% increase in Urdu. However, a substantial surge in the Urdu lexicon was observed in the 4-4.11 age group, reaching 50%, while the increase in the English lexicon was comparatively lower, at only 2%, comprising 13 % of all words identified by this age group.

Statistical Analysis

SPSS Version 20 was used in this research for descriptive analysis. Additionally, qualitative analysis was done through observation. Lexical development with conceptual scoring was employed in the study as a criterion for assessing the language skills of children aged 2 to 4.11 years. For quantitative variables, descriptive analysis using the mean and standard deviation was employed. A one-way ANOVA was conducted independently for each language in order to evaluate the mean variation or difference of responses received across 3 age groups for English, Urdu and native or other languages. Tukey's Honestly Significant Difference (HSD) for multiple comparisons was used for post-hoc analysis.

Table 2

Overall average response scores amongst age groups across languages

Response Scores	Age Category			p-value
	2 year	3 year	4 year	
	Mean (SD)	Mean (SD)	Mean (SD)	
Urdu	9.57 (12.261)	28.48 (23.690)	37.35 (29.799)	<0.0001*
English	93.96 (43.998)	96.17 (48.141)	116.71 (51.894)	0.246
Other Languages	0.07 (.378)	1.44 (8.039)	7.53 (17.172)	0.027*

*Significant Variation at $\alpha < 0.05$ level
Test of One-way ANOVA

A test of one-way ANOVA was conducted to find out how much the three age groups' mean responses score differences were. The result showed a statistically significant mean difference between the age group ($p < 0.0001$), as Table 2 illustrates. Post-hoc analysis using Tukey's Honestly Significant Difference (HSD) test was performed for further assessment. It was observed that the degree of response level increased, however, it did not reach statistical significance in the age range

of 3 to 3.11 years compared to the 2 to 2.11 years group ($p = 0.105$), as illustrated in Fig 4. Conversely, the response level exhibited a significant increase at age 4 to 4.11 years compared to 3 to 3.11 years ($p < 0.018$). Furthermore, there was an extremely important rise in the 4 to 4.11 years age group compared to the 2 to 2.11 years age group ($p < 0.0001$), showing a discernible rise in vocabulary with age.

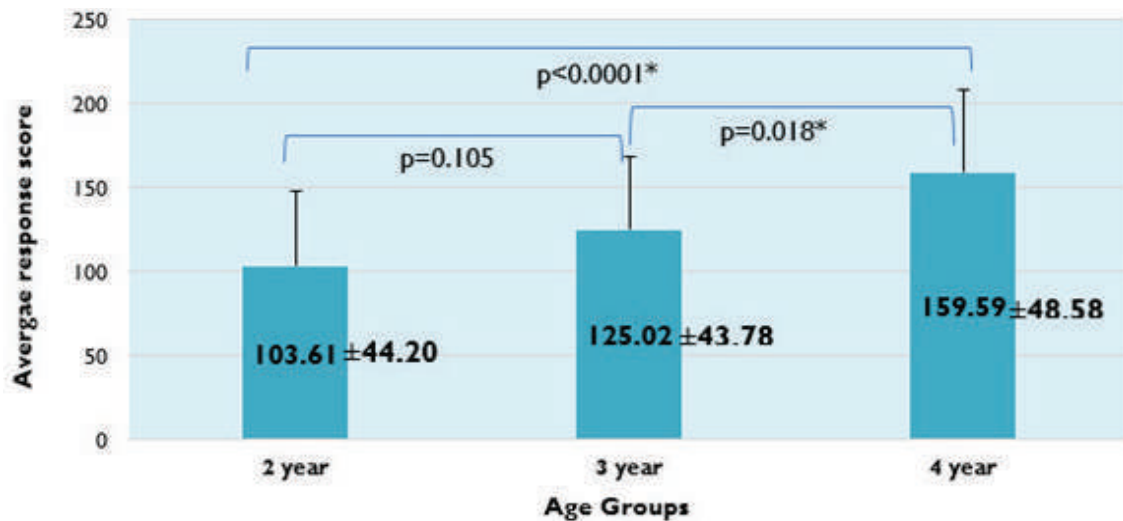


Fig. 4. Multiple Comparison of Age Group Average Response Scores

*Significant Variation at $\alpha < 0.05$ Level
Multiple comparison with Tukey HSD

To find out the average difference in response level in the Urdu Language among the three age groups, response level in the Urdu Language among the three age groups, a one-way ANOVA was performed. As depicted in Fig %, the result revealed an extremely important mean difference in responses among the age groups ($p < 0.00001$) for the Urdu Language. Subsequently, HSD Multiple Comparison were employed for Pro-hoc evaluation. The analysis revealed that response levels raised significantly in the 3 to 3.11 years age group compared to 2 to 2.11 years group ($p = 0.001$). However, there was no significant

increase in response levels between the 3 to 3.11 years and 4 to 4.11 years age group. Conversely, highly important increase in response levels was observed in the 4 to 4.11 years age group compared to the 2 to 2.11 years age group ($p < 0.0001$).

A One-Way ANOVA was carried out to determine the average difference in response level in the English language among the three age groups. As illustrated in Fig %, the finding reveal that regarding the English language, there is not a mean difference in responses between the age groups that is statistically significant ($p = 0.246$).

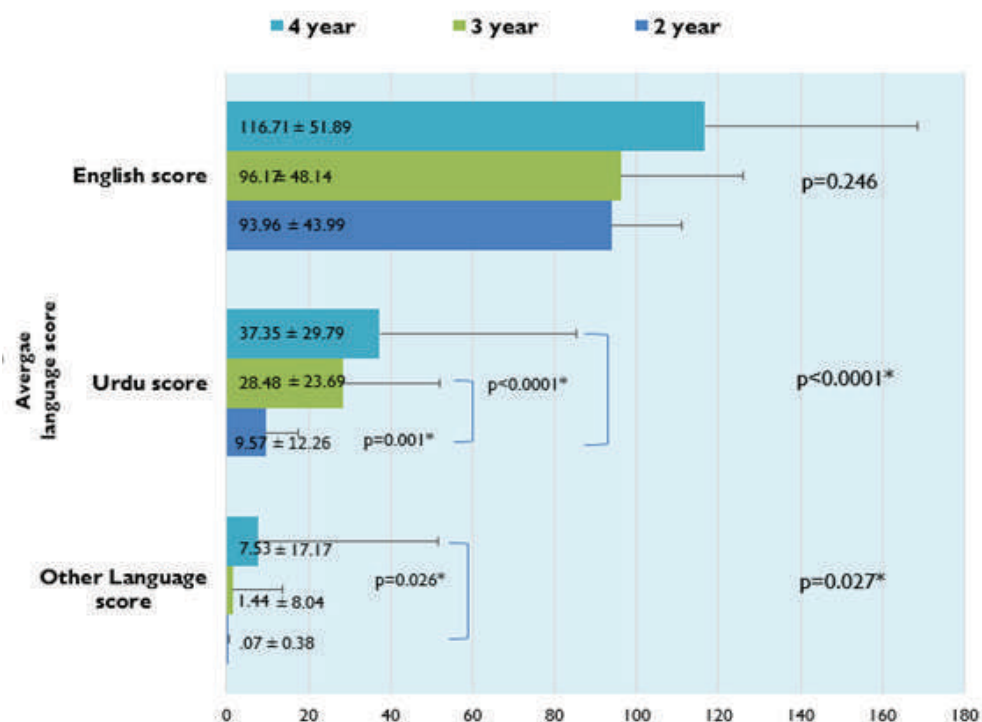


Fig. 5. Scores for the Average Response in three languages across Age Group

*Significant variation at the $\alpha < 0.05$ level
Multiple Comparison with Tukey HSD

To find out the average difference in response level in the other or native language among the three age groups, a one-way ANOVA was performed as depicted in figure 5, the finding reveal a mean difference that is statistically significant in response among the age groups ($p=0.027$). Post-hoc assessments using Tukey HSD multiple comparisons indicate an important increase at 4 to 4.11 years compared to 2 to 2.11 years ($p=0.026$) for replies in Urdu language. When it came to how many photographs the kids in each of the three age groups name, as shown in fig 4, the age-related increment in responses was almost equal. With a $p < 0.0001$, the increases in vocabulary was significant for all age groups response scores over all, as shown in table 3. The 2 to 2.11 years olds named approximately 104 images, constituting 40.7% of the total 255, with a standard deviation (SD) of 44.203. The 3 to 3.11 year old named 125 of total image shown, accounting for 49.02% of all the images shown, with the SD of 43.782. The 4 to 4.11 year old named 160 of the total image shown to them, representing 62.75% with an SD of 48.579. The mean score that they obtained for naming images in the SLSB, as determined by the pilot study, were in line with their total lexical score.

Discussion

The findings of this study shed light on whether children's language impairment or developmental language disorder (DLD) might be overlooked due to experience of multiple languages in their home and school environments during their formative years. The children who participated in the study showed no indications of language impairment, based on the consistent growth in their vocabulary across the age groups of 2 to 4.11 years. They were able to name words from a variety of word classes, including nouns, verbs, adjectives, and prepositions, which were included in the Screener for Bilinguals for Lexical Skills. It is important to remember that kids with DLD might not speak using words from every word class.

Children that are bilingual may have language impairment in either of the languages they speak (Kohnert, 2010; Nayeb et al., 2021). There is a common misleading perception that kids who are bilingual—that is, who grow up hearing two or more languages in the classroom may not get the proper diagnosis of particular language impairment or DLD (Kan et al., 2020). The importance of assessing bilingual or multilingual children in a way that allows to use their whole language repertoire while highlighting is emphasized by the SLS for

Bilinguals.

The analysis of the data revealed a consistent increase in the lexical abilities of children among the three age brackets, spanning from 2 to 2.11 years to 4 to 4.11 years, as depicted in Figure 5. Children between the ages of 2 to 3 years exhibited a more pronounced expansion in lexicon compared to those aged 3 to 4.11 years, which aligns with developmental patterns observed in early language acquisition. This underscores the notion that lexical growth mirrors the progression of language acquisition, transitioning from single-word (holophrastic) utterances around 12-18 months to the formation of semantic-syntactic phrases through word combination (Brown, 1973) once they have acquired approximately 50 words (Nelson et al., 1978). Nelson classified a child's initial words into nominal, representing the largest category, and action words, modifiers, function words, and personal social terms in that sequence. Typically, young children exhibit a receptive vocabulary larger than their expressive lexicon, with this discrepancy gradually diminishing as they mature. At the age of two, children typically possess a lexicon with expressive power of around one hundred words alongside a receptive vocabulary of approximately two hundred to three hundred words.

The responses gathered showed a significant variation in the children's vocabulary / lexicon across the many languages they spoke. Across the three age group, a noble raise was observed in the children's responses in Urdu Language (L1 or L2), while there was no significant escalation in the number of images named in English language (L2 or L3). Conversely, a substantial raise in responses observed in the 'other language' among the 4 to 4.11 year old age group. Only eight children, aged among 3 to 4.11 years, utilized the "other language" (L1) alongside with the Urdu Language (L2) and English Language (L3). The term 'other' in this context denotes the child's mother tongue, or native language, which typically constitutes the primary language the child is predominantly exposed to as L1 within the home environment. This could explain why eight children in the smallest group demonstrate an increases in lexical skill in the "other language". It is evident that bi/multilingual children exhibit varying levels of lexical proficiency in the languages to which they are exposed (Hoff & Core, 2015; Kan et al., 2020).

Taking into account the influence of English as

a Language of Learning (ELL) on the overall lexical growth, each child employed English to label certain images; however, there was no marked increase noted in their English lexicon. This phenomenon could be linked to English being acquired in a sequential manner as the language primarily used for educational purposes, rather than as the primary mode of communication at home for many of the participating children. Nonetheless, the children did not encounter notable challenges in acquiring English when they were still learning to speak by being exposed in an educational environment

In Pakistani society, English is not widely spoken, leading to a common practice in academic institutions where the principle language of instruction is English. Consequently, it's often mandated for teachers to exclusively communicate in English with students, aiming to facilitate a natural acquisition of the language, particularly considering that the majority of households speak their mother tongue or Urdu at home. Interestingly, the SLSB includes sixty-six loanwords from Urdu, reflecting the linguistic repertoire of native Pakistani teachers and parents. Consequently, the children in this study might have utilized these loanwords when naming the pictures. Eleven percent (11%) of the kids who answered only in English might have changed how they used language depending on where they were. Despite English being the instructional language in all the playschools involved in this research, a notable increase in lexicon was primarily observed in Urdu, the primary language for eighty nine percent (89%) of the kids.

This study does not compare the lexical development of children who are bilingual and multilingual with that of children who are monolingual, nor does it evaluate the children's overall lexical proficiency across all languages spoken. It's worth noting that evidence suggests bilingual children typically have a smaller lexicon across their languages compared to monolingual peers. Lexical growth is often facilitated when children actively engage in language-rich experiences, associating new words with corresponding experiences. In this study, teachers at the participating playschools predominantly used English for communication and encouraged interactive learning activities with real-life and toy objects. Children of all ages were able to interact more fully with language because to these

concrete objects, which improved their lexical development. Notably, exposure to languages other than English, particularly Urdu, primarily occurred outside the school setting.

SLS for Bilinguals was conceived with the understanding that children growing up in bilingual environment absorb vocabulary from all languages they encounter through their everyday experiences (Bedore et al., 2005). Those who acquire 2 two or more than 2 languages concurrently demonstrate linguistic interconnectedness among their all languages while retrieving words for expression, a phenomenon less pronounced in sequential language learners (Kan et al., 2020). This suggests a stronger cognitive connection between simultaneously acquired languages. With eighty nine percent (89%) of the responses of children encompassing Urdu-English-other Languages and Urdu-English, it is manifest that the children adeptly engaged in code-switching while mentioning the depicted items.

Because of the linguistic experiences they encounter in their environment, bilingual children acquire language very differently from monolingual children (Itani-Adams et al., 2017). Children from the bilingual societies may hear one than one word for a single thing (Characteristic, object, place or event), thus when necessary, they must retrieve or remember the correct word. This trait is an enhanced cognitive skills that result from a greater working memory, or, to put it in another means, it is higher cognitive or metalinguistic competence. Therefore learning a language is a dynamic and complex mental process. The human brain is systematically integrated with linguistic knowledge, not discrete units representing words from different (Szabo, 2016). The variation in the quantity of images identified by each age group demonstrates how vocabulary grows with age.

The lexical size for the children in all languages wasn't determined because they weren't expected to speak of every image in every language the recognized, making it difficult to determine the advantages of bilingual (del Pilar Agustín-Llach, 2019). However, given the kids met the SLSB cut off score for their age range, the steady rise in vocabulary across age range of different groups suggests that the kids did not have any language impairment. All three age groups' children, however, received an average score that indicate they had a limited vocabulary, even if the conceptual scoring was used to assess their

answers (Bedore & Peña, 2008; Bedore et al., 2005). Hence, it is recommended that performing is an ongoing assessment of young children's lexical competencies in order to determine whether language develops age appropriately (Kapantzoglou et al., 2012).

CONCLUSION

The Screener of Lexical Skills for Bilinguals (SLSB) serves as a straightforward screening instrument, wherein children are prompted to identify or name images depicting various items, fruits, animals, places, actions, positions, and simple descriptions. Employing conceptual scoring methodology proves invaluable in evaluating language development within bi/multilingual communities. Children participating in the study consistently engaged by identifying or naming SLSB images in any language they were familiar with, with their responses being recorded using conceptual scoring

Concluding the findings of this study, the first research question can be addressed by noting that all children who took part named few images in English. However, across all age categories there was no discernible gain in their English lexicon. Conversely, in all age categories, there was a discernible rise in lexicon for the "other" or native language and Urdu. Therefore, it can be concluded that throughout the early stage of development, Urdu language (L1) act as the major language of instruction, and English language (L2) is introduced when the child has mastered and acquired Urdu. This sequential approach may offer cognitive, linguistic, and academic benefits for the children those speak more than one language. The pace of Urdu mastery and acquisition appears to correlate with the linguistically enriched environment outside the school environment, where children predominantly spend their time. Moreover, Urdu being separately taught as a subject in playschools further contributes to its acquisition. Simultaneously, while English serves as the language of instruction, it plays a comparatively lesser role in enhancing lexical skills compared to Urdu and other languages

The second research question can be explored by examining the analysis indicating that the children in this study exhibited typically developing language skills, as evidenced by the increase in lexical size across all languages and age groups. It is known that bi/multilingual children

often possess a smaller lexicon compared to monolingual children. Given that all participants came from bilingual families, it is reasonable to suggest that bilingualism may increase a child's capability to recall words in any of the languages they are exposed to, drawing from their understanding of semantic features such as appearance, function, and location, as evidenced by conceptual scoring. This underscores the benefits of exposure to multiple languages in early childhood for the development of lexicon, although child's early expressive lexicon might not reflect it right away.

In bilingual and multilingual communities, speech-language therapists are advised to evaluate children's language development by assessing their lexicon in all languages. This can be achieved using images that children can name spontaneously or indicate through description of appearance or function. Employing conceptual scoring for their responses ensures a precise understanding of the children's true lexical capacity, offering valuable insights into their language, cognitive, and phonological abilities. Assessment instruments like the SLSB are efficient and straightforward to utilize in this regard

This study also promotes professionals engaged in early childhood development to enrich socio-communicative interactions in children's native language (L1), second language (L2), and third language (L3) among caregivers and educators. This approach aims to optimize language development, psychosocial skills, academic performance, and emotional health. Even in bilingual or multilingual environments, children can effectively learn English as a second or third language when introduced to it during their early years in playschool, despite limited exposure at home

This research is focused on advancing aural rehabilitation by developing and optimizing evidence-based therapeutic interventions that leverage cutting-edge technologies, such as auditory training software and cochlear implant programming, to improve auditory processing and communication abilities in individuals with hearing loss.

Recommendations & Future Directions

In light of the study's findings, in schools where English is the major language of teaching, it is advised that instructors incorporate

both the native language (L1) and English. This recommendation is grounded in the understanding that L1 serves as the cornerstone for subsequent language acquisitions in a child's linguistic journey. Given the longstanding debate surrounding bilingual education, it is evident that children's English proficiency is unaffected when they are exposed to both English and their native languages within the educational setting, thereby enhancing their prospects for future academic success. Moreover, proficiency in English equips children with valuable skills for academic and career advancement later on in life or afterword. By enhancing and varying the use of one's native tongue in addition to English, educational outcomes can be enhanced, fostering conceptual understanding and bolstering the child's confidence, ultimately positively impacting their academic trajectory.

It is recommended that future research employing the SLS Lexical Skills for Bilinguals should compare the expressive vocabulary of monolingual and bi/multilingual children, encompassing a comprehensive assessment of responses in all spoken languages, yielding a global score for each group. Additionally, a prospective study utilizing a cross over design could assess the child's proficiency in the naming SLSB words in Urdu, the native language, and English, facilitating a comparative analysis of vocabulary across languages and determining the cumulative vocabulary across all languages spoken by the child. Standardizing the SLS for Bilingual as a lexical evaluation tool for children raised in the Indian subcontinent and exposed to many languages throughout their years is the main objective of such research projects. Such standardization would render the SLSB a valuable instrument for conducting dynamic assessments of kid's lexical development over time as they progress through different developmental stages.

Competing Interest

The authors had no competing interests.

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