INVESTIGATING EFFECTS OF AGE ON SEQUENTIAL SYNTACTIC AND MORPHOLOGICAL DEVELOPMENT IN PAKISTANI SECOND LANGUAGE LEARNERS

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ABSTRACT

Learning a second language, primary-level students find the process of developing syntax complex perhaps because they do not have sufficient awareness of the syntactic errors they commit at this early stage. Yet, there is a scarcity of studies on this domain to the best of our knowledge. Employing a mixed-method approach, the current study used tests, interviews, and observations to investigate the complexity of the developmental sequences with a particular emphasis on syntactic errors made by Pakistani learners of ESL. Analyzing the data quantitatively and qualitatively, the study caters to the common syntactic errors committed by Pakistani primary school students, including tense, subject-verb agreement, missing articles, conjunction, pronouns to infinitives, and word order. The study concluded that the sequential syntactic development in acquiring syntax is highly influenced by the factor of age perhaps because older children acquire syntax faster than younger ones. The study implicates to development of the second language at the primary level with a diverse age range.

INTRODUCTION

Syntactic sequential development is a cognitive development of the system of human faculty of language and its growth in the human mind is at the initial level, is not available but it is developed gradually (Friedmann et al., 2021). The development of the syntactic and morphological sequential cues is the "geometry of the syntactic tree" (Friedmann et al., 2021). This development starts from the left periphery and according to Rizzi and Bocci (2017), the syntactic trees are sequentially developed from bottom to higher. Therefore, the small clauses grow in a child's mind as soon as the process of language development initiates. Language learning is the process of parametric variation. According to Kemper et al. (1995), "syntactic development accelerates rapidly from the fourth to the sixth year of age" in children. In the development of early childhood grammar, Legendre (2006) argued that "tense and agreement production reflects separate courses of acquisition" in children and the production of "non-present tense starts and ends roughly at adult-like levels in children".

Early syntactic and morphological development starts at the initial puberty level and after that, it develops gradually from time to time among the learners. This development has been investigated by scholars (Alqhtani, 2018; Alharthi, 2021; Ali et al., 2021a; Ali et al., 2021b; Khan et al., 2022; Ayu & Nurweni, 2023; Abdelhalim, 2024) taking a diverse range of phenomena such as written assessment, discourse analysis, pronunciation and morphology and semantic processing but the development of syntactic error with respect to age factor is not still under-investigation.

Working on early childhood syntactic utterances was dedicated to the distributional analysis in the domain of early childhood studies and the word classes are Pivot (P) and Open (o) that are distributed in the development processing in the combination of P+O and O+P. It was done in the early stage of syntactic acquisition. Leaving aside the distributional analysis, the advancement has been in child language acquisition and specific and basic grammatical relational analysis has been developed in the form of Subject (S), Verb (V) and Object (O) in the representation of subject-predicate relation. According to Kelley (1967), two stages are involved in two word utterance period. In the first stage, the predicate forms are formulated (V+O) whereas subject specification are addressed later with hierarchical constructions.

Nowadays trends on language development, assessment and sequential development have been shifted to cognitive system to unveil the systematicity of children's learning capacity. Many studies (Sultan, 2015; Talpur & Shah, 2017; Saleem et al., 2018; Shaikh & Jibran, 2020; Khan et al., 2022; Ahmad et al., 2023; Harefa & Sibarani, 2023; Nazim et al., 2024) focused in Pakistani context of error analysis alone and they, to the best of our knowledge, did not focus on sequential development (Ramer, 1977) in children. The studies focused on grammatical relational analysis in various assessments among the learners such as essay writing, pronunciation, grammatical error, phonological error and morphological errors (Jabbar et al., 2021) without its effect on age which is the crucial factor in developing the sequential proximity.

This study is, to a great extent, significant as it deals with the development of syntactic sequential development as the age of learner increases. The study is quite significant as it ranges to expand its horizon among Pakistani primary school level learners from age 1-6. To deal the learners at this, it is quite difficult and they are not properly focused within study. Therefore, this study closely scrutinizes the primary level students.

Background of the Study

The concept of errors analysis was pioneered by Corder (1975) and according to Khan and Khan (2016), "error analysis is a kind of linguistic analysis and is a qualitative approach which is a reliable method because of its focus on the linguistic interference of the errors occurring in learner's language usage while learning a second language". It is considered as a kind of linguistic analysis using qualitative approach as it focuses on the interference of the errors that are typically involved in the learning second language. According to Brown (2000), error analysis is the process of observing, evaluating, analyzing and categorizing the distinction among the errors used by standard language learners and second language learners (Ashraf et al., 2021).

Errors are classified into many sub-layers such as tense, agreement, pronoun, copula, article, pluralization, negation, adjunction, coordination, subject-verb agreement and preposition (Saram et al., 2023). All types of errors are linked with leaners 'performance in acquiring second language. Age, gender and social factors play a very crucial role in developing language acquiring capability of learners. In this domain a few studies (Shaikh & Jibran, 2020; Khan et al., 2022; Ahmad et al., 2023; Harefa & Sibarani, 2023; Nazim et al., 2024) devoted to error analysis that somehow related to cognitive process. Shaikh and Jibran (2020) worked on error analysis committed by the medical students typically studying in Government College. The students were assessed using the written essay tests. The study adopted a qualitative approach and the data collection techniques employed was written essay tests as a tool to assess the students and the samples were taken from fifty students. The study utilized Corder (1975) model of error analysis. The study explored that "spelling, subject-verb agreement, tenses" are most frequently observed errors but they study did not suggested the age a factor.

Khan et al. (2022) dedicated the work on error analysis of the undergraduate students of the department of English. This study adopted a quantitative approach which consisted on thirty egith papers of one subject of the most senior semester (eighth semester). The study also took Corder's model of analysis and investigated the five types of errors in "punctuation, spelling, articles, tenses, and prepositions." So for this study also did not focus on the age of the development of early childhood error and systematicity of cognitive development. Ahmad et al. (2023) examined the comparison of syntactic error in English writings

between the two languages. This study used a quantitative method of analysis and delimited to the students who were studying in both types of institutions government as well as private in district Lahore. The sample size of the study was 60 students from both schools which were divided into two groups. Data had been collected using a questionnaire tool and analyzed using statistical tools. The results indicated that private school's students committed less errors than government schools. It was due the input instructional material. This study likely to previous studies did not examine the effects of age on the development of sequential development (Ilyas et al., 2023).

Harefa and Sibarani (2023) examined the error analysis of communicative effect taxonomy of the students at tenth grade. The study focused on the local and global errors. The study employed a qualitative designed research methodology and collected data from tests and interviews as the research tools. After analyzing data, the study suggested that errors are very common which consists of 57.14% at local level and at global level the ratio of error are less up to 42.85%. The study furthermore reported that local errors hinge on articles, auxiliary, noun, quantifier and verb inflection and the most frequently occurring errors are noun and verb inflection. Nazim et al. (2024) worked on the competency of leaners as writing is very difficult as a great number of students faced problems while writing any piece of text. The study reported that classroom writing required to express the feelings and dictums and writing instruction hinged on four key stages planning, creating, rewriting and editing. This focused on the ungraduated students from three public universities. The study opted out a qualitative research methodology and errors were identified into 18 broader categorization and most commonly occurring errors are tense and punctuation. The study did not focus on the development of sequential complexity which is a dependent on age of the learners. The age of the learners determines the development of syntactic proximity. This sequential development has been investigated using to assess the students' errors (Naz et al., 2023). Therefore the current study formulates the research questions.

Research Questions

1. What are the common syntactic errors committed by Pakistani primary school students studying ESL, and to what extent do these errors differ across different age groups?

2. What is the sequential syntactic development for Pakistani primary school students?

3. Is there any significant difference between ages of the learners in sequential development of syntactic error?

METHODOLOGY

Participants

This study adopts a mixed-methodology to investigate the errors and their effect on age on the learners' sequential development in Pakistani primary school learners as the mixed methodology is very suitable for the descriptive and theoretical research (Ali et al., 2021a). The study recruited primary children from grade 1-6 from elite class schools in Sargodha region. The students were randomly selected for this study taking an informed consent from their parents following ethical considerations (Ali et al., 2021b).

Table 1. Participant details.

Sr.	Number of Participant	Age Range	Grade
1	10 (boys=5, girls=5)	1 years	One
2	10 (boys=5, girls=5)	2 years	Two
3	10 (boys=5, girls=5)	3 years	Three
4	10 (boys=5, girls=5)	4 years	Four
5	10 (boys=5, girls=5)	5 years	Five
6	10 (boys=5, girls=5)	6 years	Six

Data collection

The study collected data from multiple tools such as tests, observation and interviews of the children (Naz et al., 2023). These data collection tools are used as the instrument of the study. The accumulated data from tests is a common testing tool through which a written test based on some basic questions have been constructed to circulate the students to assess their ability (Naz et al., 2023). After initial data collection from tests, the researchers using the same questionnaire, conducted an interview to the students and assessed and observed them in speaking to get more validity of the collected data (Ali et al., 2023). Therefore multiple tools are very reliable to validate the study (Saram et al., 2023). The effect of age on cognitive development will be assessed using one to one interview (Ilyas et al., 2023).

Data Analysis

Data has been analyzed using mixed methods, for this we used SPSS software to check the descriptive statistics which is provided the mean ratio, frequencies and standard deviation. For qualitative analysis the study used a descriptive method (Ali et al., 2023; Ilyas et al., 2023), and classifies and identifies the errors committed by Pakistani ESL learners.

Results and Discussion

This part seeks to present the key findings and insights gained from analyzing the data gathered in the current study that aims at developing a comprehensive understanding of the syntactic development of Pakistani ESL learners. In order to show more involvement, the findings will be interpreted analytically in line with answering the research questions:

1. What are the common syntactic errors produced by Pakistani primary school students studying ESL, and to what extent do these errors differ across different age groups?

2. What is the sequential syntactic development for Pakistani primary school students?

It consists of two main sections. The first section focuses on the common syntactic errors produced by Pakistani primary school students studying ESL and any differences with reference to age. The second section considers the sequential syntactic development for Pakistani primary school students.

Common Types of Syntactic Errors and Age Variation

Analyzing the data gathered from the interview transcripts, Table 1 shows the common types of syntactic errors committed by Pakistani primary school students who learn English as a second language (Ali et al., 2021b). The errors are categorized according to the order with the most frequent errors to the least frequent committed by the participants. It can be gathered from this table that the highest error rate is found with 12 tense errors committed by Grade 1 students. Subject-verb agreement (7 errors grade 3), missing articles (7 errors grade 1), conjunction (7 errors grade 3), and pronouns (7 errors grade 5). The least predominant error committed is found with to-infinitive (1 error grade 5) and word order (1 error grade 1).

Table 2. Common types of syntactic errors and grade variation (interview transcripts).

	Copula	:-verb Agre	Tense	To Infinitive	Missing Artic	Preposition	Conjunction	ngular/Plur	Pronouns	Word Orde	tional Adje	Adverbs	Negative
Grade 1	0	0	12	0	7	0	0	0	0	1	0	0	0
Grade 2	1	2	7	0	5	5	0	0	1	0	0	0	0
Grade 3	4	7	1	0	4	0	7	3	0	0	1	0	0
Grade 4	1	4	1	0	2	2	0	4	1	0	3	0	0
Grade 5	3	4	0	1	2	0	0	3	7	0	1	2	0
Grade 6	1	5	1	0	4	2	0	0	1	0	1	0	3

Such findings can be substantiated by those obtained from analyzing the tests, as revealed in Figure 1 below. It is evident that the highest percentage of errors committed by students is associated with tenses

(12 errors grade 1). Other common errors also include: Subject-verb agreement (7 errors grade 3), missing articles (7 errors grade 1), conjunction (7 errors grade 3) and pronouns (7 errors grade 5). These findings can be backed up by previous research. As the study conducted by Hafiz et al. (2018) regarded tense as a main type of syntactic errors (Ilyas et al., 2023). It also identifies copula, subject-verb agreement, to infinitive, articles, prepositions and conjunction as common types of syntactic errors made by Pakistani students.
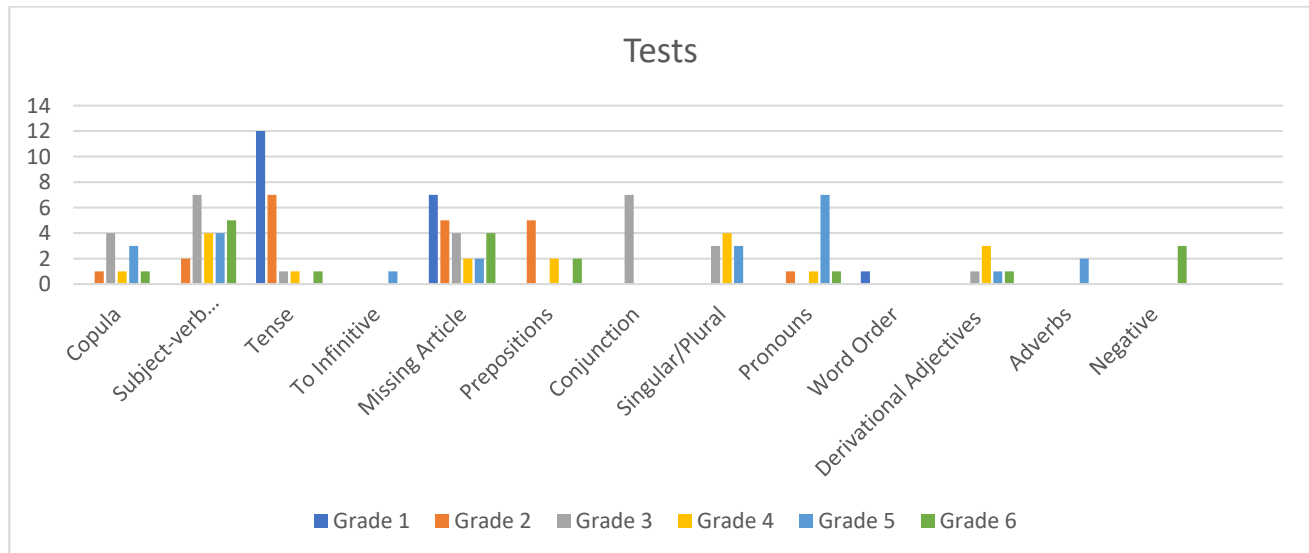

Figure 1. Common types of syntactic errors and grade variation.

Another important finding is that there is a remarkable variation among different age groups or grades. Some evidence can be gained from the interviews that show how tense as the main syntactic error varies a lot among grades: G1 (12 errors), G2 (7 errors), G3 (1 error), G4 (1 error), G5 (0 error) and G6 (1 error). Another useful example can be obtained from tests as revealed in the syntactic error of missing article that reflects a lot of variation among grades: G1 (7 errors), G2 (5 errors), G3 (4 errors), G4 (2 errors), G5 (2 errors) and G6 (4 errors). This variation is critical because it sheds some light on the complex nature of syntactic errors made by Pakistani primary school students when English as a second language. It is of interest to figure out the actual reasons or causes that may lead to such a variation of committing syntactic errors at different ages. According to Sompong et al. (2014), the process of error analysis is essential in teaching EFL because it "can reveal the sources of these errors and the causes of their frequent occurrence". Wahid and Farooq (2019) discovered syntactic errors can be associated with a variety of factors, such as L1 interference, insufficient knowledge of basic grammatical rules, little or no knowledge of parts of speech, inappropriate use of the dictionary, and overgeneralization. In a similar Saudi context, Al-Sofi (2021) argued that the main reasons behind syntactic errors "were rooted in the students' interlingual (first language interference) and intralingual (overgeneralization, inadequate knowledge of second language rules, and inappropriate application of such rules) factors".

Analyzing the data gained from interviews and observations qualitatively, a key theme that emerged is that the common types of syntactic errors are mainly influenced by the variable of age. It can be established that subject-verb agreement is one of the most salient syntactic errors that show the role of age variation in committing syntactic errors. In this regard, Grade 3 committed more concord errors than other grades such as Grade 4 and Grade 5 perhaps because of the complex concord system of Pakistan in comparison to the concord system that shows how only 3rd person singular subject takes: s, -es, or -ies According to Hafiz et al. (2018), "the deletion of the [-s] marker when the Arabic speaking learner uses the present simple" is a key problem. They added that "The correct subject-verb agreement in English sentences is not easy for Arabic speaking learners due to coexisting mother tongue rules". Some examples can be gained from the present study for empirical evidence:

1. Masha make me laugh. (Zoya, Garde 1)

2. I love Egypt because my mom go there to take the PHd. (Moiz G)

3. My dad she love me to be Doctor. (Aqsa G)

Sequential Syntactic Development for Pakistani Primary School Students

An interesting emerging point that came from analyzing interview transcripts, observations and tests is that there is an urgent need to track sequential syntactic development for Pakistani primary school students. Krashen et al. (1979), "Older children acquire faster than younger children (again, in early stages of morphological and syntactic development where time and exposure are held constant". Some evidence can be gained from the current study to substantiate Krashen et al.'s findings. The number of syntactic errors committed by Grade 1 are more than those committed by Grade 4 and Grade 5. For example, the findings gained from tests show that the syntactic error of missing articles is mainly committed by G1 in comparison with Grade 4 and Grade 5. Some useful instances can be gained from analyzing the interview transcripts qualitatively:

4. I want to be engineer. (an)

5. My father is engineer. (an)

The early study conducted by Scott and Tucker (1974) could substantiate such useful findings because it discovered that "The most noticeable error in using the indefinite article by Arabic speaking learners was in deleting the indefinite article". Another syntactic category that reveals the sequential syntactic development for Pakistani primary school students is to infinitive. According to the qualitative data analyzed in the interviews Grade 1 learners committed more to infinitive errors in comparison with Grade 5 or Grade 6 learners, as shown in the following examples:

6. I love swim and draw(to)

7. I love play football (to)

8. I love go Kakka (to)

Some evidence can be gained from previous literature. In this context, Hafiz et al. (2018) pointed out that "it is not easy for Arabic speaking learners to use the infinitival to properly" because "Arabic has no infinitive". They added that "Infinitive is a grammatical term referring to certain verb forms existing in many languages, most often used as non-finite verbs. In traditional descriptions of English, the infinitive is the basic dictionary form of a verb when used non-finitely, with or without the particle to". It can be established that this "systematic analysis of errors eventually provides useful insights about the system operating in the learners' mind and reveals the learners' knowledge about the grammatical systems of the target language" (Tizazu, 2014). Pakistani learners are quite different from Arabs due the geographic region, understanding and the influence of English as second language along with cultural berries.

Syntactic dictums on learner's errors

Syntactic study of errors is very significant domain of inquiry as language is an innate potential of every individual (Chomsky, 2021) through with every normal child can generate infinite number of well-formed grammatical sentences but developing the human cognitive system is a sequential process as it develops in various stages, each stage is responsible to develop independent area of language from articulation to discourse but the one crucial point is central is that syntax provides an abstract structure to every module so it is very important. Abstract structure of language are connected via some fully packed relation technically called government (Chomsky, 1980; Manzini, 1983; Koster, 1984)

Government is referred to as a governed mutual relation among the lexical and functional categories and these relation can be connected via some selection features, at outer level. The lexical category of nouns is related to a significant number (these are the binary features) of connectors. Most frequently, it serves as

the head for a clause, implication phrase, or tense phrase. When a noun is indicated under the genitive case, gender is occasionally provided. For a better comprehension of a language, tense phrases are further separated into noun phrases and verb phrases, where inflectional and prepositional phrases serve as tense and aspect markers, respectively.

Binding Theory is the most specific general phrase that relates the noun/pronoun (DPs) and its variants likelihood concerning nouns and their relationship in the sentence (Ilyas et al., 2023; Ali et al., 2023). The binding theory has additional requirements for approving the grammatical focus of a sentence. Another important element that raises the value of a binding theory is C-Command since it justifies returning to the headword. C-Command also can make sentences less ambiguous, which improves the intelligibility of the language (Naz et al., 2023). Illuminating the second part of Chomsky's perspective on binding declares a relationship between antecedents and anaphoric elements e.g. pronouns associated with each other grammatically (Ashraf et al., 2021).

9. "Aqsa saw herself"

The antecedent "Aqsa" bounds the anaphor "herself". Different languages and learner's stage of leaning and grad have several binding restrictions based on structural patterns, morphemes, and paradigmatic limitations in syntax. The binding domains of the English language are reflexive pronouns, reciprocal pronouns, personal pronouns, and nouns. Defining government and binding theory as a whole are related to the assignment of the case. A case includes the corresponding grammatical functions of the nominal group based on b and modifiers in any language.

If "B" is governed by "A" then here the governor is "A" that commands "B". Particularly, the head of lexical categories are governors, making the case assignment justified.

The three fundamental rules that are considered in structuring the patterns of any language are;

I.   A reflexive or equivalent anaphor must be confined in the area around it.

II.   It is forbidden to bind a pronominal (non-reflexive pronoun) in the vicinity of it.

III. It is forbidden to bind a non-pronoun.

Chomsky published a book "The Pisa Lectures" in 1980 based on the collection of lectures Chomsky delivered during the GLOW meeting and workshop, held at the Scuola Normale Superiore in Pisa, Italy (1980). Chomsky proposed his framework on the language structure's limiting hypothesis, significantly influencing syntactic research in the middle of the 1980s, especially among etymologists working with the transformational language structure system. These assumptions can be compared to constraining requirements in many ways.

In Pakistani second language learners at any grade develop their language faculty the same process as naturally observed in all the normal children. The most common errors performed by Pakistani SLs are tense. If we study deeply on language development it can be concluded that there are due to two main reasons: (a) social overridden and (b) syntactic-parsing mismatching. Social issues can be rectified through memorization and repetitive stimuli within a controlled environment and social overridden also based on to a great extent syntactic parsing. In memorization process, linguistics items (lexical vs functional) are encoded in the system and for retrieval processing, there is also a module of selection, sociolinguistic ally selection may vary but syntactically errors occur within the system.

According to Chomsky (2008) and Ali et al. (2023), deriving a fully-convergent a sentence, sentence structure can be divided into chunks and constituents. These sub-parts are technically called phases (Chomsky, 2008; Richards, 2015) CP and vP are the two domains of phases and according to X-bar theory each phases must be projected via a head which control the whole domain of phases. These distinctions are categorized according to the memory access of the children from the system (Saram et al., 2023). When one

phase is completed its complement domain becomes inaccessible for further computation only edge (Bošković, 2014) is active for further computation.

In example (10), it is an error noticed as the common errors from Pakistani leaners and it is identified as the tense error and at the same time it is also the agreement error. The issue is that Masha is DP/NP and the remnant is VP layer. According the phases system, two phases are sequentially developed through a unified process/principle. First of all the lowest domain that firstly generates is vP orthodoxically is also called thematic layer within the framework of GB. First of all it is the syntactic error as it is labeled as crash according to crash theory (Broekhuis & Vogel, 2010). The sentence is generated as the first process starts by selecting the particular words from lexicon and assigned some specific values that how many time this word can be repeated in the derivation. This process is called Numeration within the system, at this stage no error because is the conceptualization is sorely stick to performance not competence. The second process is to align the selected items. It means these selected NP/DP and pronominal must be valued theta-feature unless there can be valued. At this stage, all the NP/DPs and Pronouns are assigned thematic roles/valued theta feature. There will be no error because all the selected items are arranged accordingly. The last process is to generate the functional layer and upper-phase CP phase. If there will be upper-phase CP layer it is finite and strong it inherits case to the lower IP and here I head is missing that must be according to NP/DP –s. but speakers of Asian language did not develop this inflection layer as the phases cannot be converted into phases that is why this sentence is ungrammatical. Lower phase- vP did not upgraded into upper phase CP syntactic error is due to this reason and for developing this layers, speakers memorization process must be activated with creating any interface with L1 language system. Lower v head bears some specific features like theta, case, number and tense. The reason is that the complement part of this sentence is grammatical [make me laugh]. But the issue is that whenever the upper layer comes in contact with lower phase the mutual requirements do not fulfill that is why the derivation crashes and called an ungrammatical. Learning/acquisition involves developing some core syntactic principles that's why there must be reduced. If we talk about the whole nominal phrase or pronouns, in pronominalizational phrase, there is also a functional layer that assigns theta features and case.

10. Masha make me laugh. (Zoya, Grade 1)
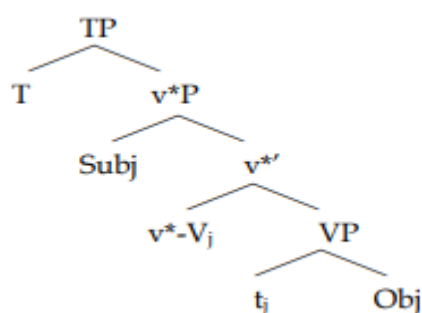

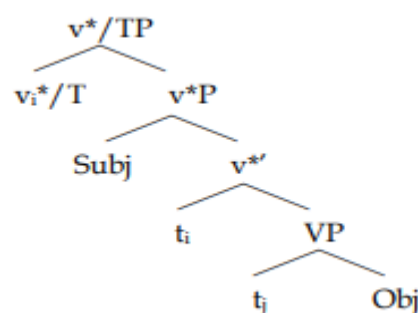Diagram-1   Diagram-2

In the above diagrams 1-2, it is due the memory of the learner's, vP is one phase and TP the second phases, both bears some features, if the upper sentence in example (10) is ungrammatical it is due to one functional feature as one layer cannot be converted into the upper domain because all the layers operates paralleled.

CONCLUSIONS

The study predicts the common syntactic errors committed by Pakistani primary school students who learn English as a second language are: tense, subject-verb agreement, missing articles, conjunction, pronouns to-infinitive, and word order. In addition, the study argues that the sequential syntactic development in acquiring syntax is highly influenced by the factor of age perhaps because older children acquire syntax

faster than younger children in Pakistani elite schools in Pakistan. Primary level learners did not develop the sequential syntactic development as adult level learners.

REFERENCES

Abdelhalim, S. M. (2024). From traditional writing to digital multimodal composing: promoting high school EFL students' writing self-regulation and self-efficacy. Computer Assisted Language Learning, 1-30. https://doi.org/10.1080/09588221.2024.2322148.

Ahmad, A., Shahid, H. S., & Farhat, P. A. (2023). Comparative analysis of syntactical errors in the writings of esl students at secondary level in Pakistan. Global Language Review, 8(2), 203-213.

Alharthi, S. (2021). From instructed writing to free-writing: A study of EFL learners. SAGE Open, 11(1), 21582440211007112.

Ali, A., Jabbar, Q., & Kiani, H. (2021a). Clausal-internal scrambling in urdu language: A derivation by phases. REiLA: Journal of Research and Innovation in Language, 3(1), 52-60.

Ali, A., Jabbar, Q., Malik, N. A., Kiani, H. B., Noreen, Z., & Toan, L. N. (2021b). Clausal-internal switching in Urdu-English: An evaluation of the Matrix Language Frame Model. REiLA: Journal of Research and Innovation in Language, 3(3), 159-169.

Ali, A., Malik, N. A., & Zain. (2023). Split tense projection in Urdu: An illusion. Pakistan Journal of Language Studies, 7(1), 16-31.

Alqhtani, M. (2018). Investigating syntactic errors among Saudi EFL learners. Arab World English Journal, May 2018, Available at SSRN: https://ssrn.com/abstract=3177836

Al-Sofi, B. B. M. A. (2021). Student satisfaction with e-learning using blackboard LMS during the Covid-19 circumstances: realities, expectations, and future prospects. Pegem Journal of Education and Instruction, 11(4), 265-281.

Ashraf, J., Mehmood, N., Ali, A., & Jabbar, Q. (2021). Possessor in Urdu nominal phrases. Educational Research (IJMCER), 3(6), 30-37.

Ayu, D. P., & Nurweni, A. (2023). Grammatical interference in Islamic school students' English narrative writings. Englisia: Journal of Language, Education, and Humanities, 11(1), 96-109.

Bošković, Ž. (2014). Now I'ma phase, now I'm not a phase: On the variability of phases with extraction and ellipsis. Linguistic inquiry, 45(1), 27-89.

Broekhuis, H., & Vogel, R. (2010). Crash-proof syntax and filters. In exploring crash-proof grammars (Vol. 3). https://www.torrossa.com/gs/resourceProxy?an=5001433&publisher=FZ4850#page=258.

Brown, D. G., Duh, J. D., & Drzyzga, S. A. (2000). Estimating error in an analysis of forest fragmentation change using North American Landscape Characterization (NALC) data. Remote sensing of environment, 71(1), 106-117.

Chomsky, N. (1980). On binding. Linguistic inquiry, 11(1), 1-46.

Chomsky, N. (2008). On phases. Current Studies in Linguistics Series, 45, 133.

Chomsky, N. (2021). Linguistics then and now: Some personal reflections. Annual Review of Linguistics, 7(1), 1-11.

Corder, S. P. (1975). Error analysis, interlanguage and second language acquisition. Language teaching, 8(4), 201-218.

Friedmann, N., Belletti, A. & Rizzi, L., (2021) "Growing trees: The acquisition of the left periphery", Glossa: a journal of general linguistics 6(1): 131. doi: https://doi.org/10.16995/glossa.5877

Hafiz, M. S., Omar, A. M. A., & Sher, K. U. (2018). Analysis of syntactic errors in English writing: A case study of Jazan University preparatory year students. Journal of Education and Practice, 9(11), 113-120.

Harefa, A. T., & Sibarani, B. (2023). An error analysis of communicative effect taxonomy in students' writing descriptive text at the tenth grader students. International Journal of English Literature and Social Sciences (IJELS), 148.

Ilyas, Y., Noureen, H., & Ali, A. (2023). Syntactic layer of coordination and conjuncts agreement: evidence from Pakistani English newspapers. Journal of Education and Social Studies, 4(3), 683–691. https://doi.org/10.52223/jess.2023.4328.

Jabbar, Q., Ali, A., Malik, N. A., Mahmood, N., & Wasif, M. (2021). Morphosyntactic sub-categorization of Lexical Verbs. Webology, 18, 6.

Kelley, K. L. (1967). Early syntactic acquisition. https://eric.ed.gov/?id=ED019671.

Kemper, S., Rice, K., & Chen, Y. J. (1995). Complexity metrics and growth curves for measuring grammatical development from five to ten. First Language, 15(44), 151-166.

Khan, A. A., Ahmad, A., Iqbal, H., & Naz, A. (2022). Analysis of morphological and syntactic errors in the writings of undergraduate students of University of Malakand. PalArch's Journal of Archaeology of Egypt/Egyptology, 19(3), 1759-1773.

Khan, S. R., & Khan, M. R. (2016). Error analysis in English writing. International Multidisciplinary Research Journal, 4(2), 232-243.

Koster, J. (1984). On binding and control. Linguistic Inquiry, 15(3), 417-459.

Krashen, S. D., Long, M. A., & Scarcella, R. C. (1979). Age, rate and eventual attainment in second language acquisition. TESOL Quarterly, 573-582.

Legendre, G. (2006). Early child grammars: Qualitative and quantitative analysis of Morphosyntactic production. Cognitive Science, 30(5), 803-835.

Manzini, M. R. (1983). On control and control theory. Linguistic Inquiry, 14, 421-446.

Naz, R., Jabbar, Q., & Saram, M. (2023). Effects of total physical response on vocabulary learning in Urdu-English deficit bilingual children. Journal of Education and Social Studies, 4(3), 797–805.

Nazim, M., Iftikhar, S., & Madad, A. (2024). An in-depth analysis of linguistic deficiencies: A study investigating writing errors of undergraduate students from three public universities in Pakistan. Annals of Human and Social Sciences, 5(1), 373-387.

Ramer, A. L. (1977). The development of syntactic complexity. Journal of Psycholinguistic Research, 6, 145-161.

Richards, J. C. (2015). Error analysis: Perspectives on second language acquisition. Routledge.

Rizzi, L., & Bocci, G. (2017). Left periphery of the clause: Primarily illustrated for Italian. The Wiley Blackwell Companion to Syntax, Second Edition, 1-30. https://doi.org/10.1002/9781118358733.wbsyncom104.

Saleem, M., Khan, F. A., & Zaman, A. (2018). Wh-movement pattern in the spoken discourse of teachers a syntactic analysis. Global Social Sciences Review, 3(2), 400-420.

Saram, M., Ali, A., Mahmood, A., & Naz, R. (2023). Neural trigger of speaking skills in autistic children: an intervention-based study. Journal of Education and Social Studies, 4(3), 424–430.

Scott, M. S., & Tucker, G. R. (1974). Error analysis and English-language strategies of Arab students 1. Language Learning, 24(1), 69-97.

Shaikh, N. I., & Jibran, K. (2020). Error analysis of English compositions of medical students in govt. college of Sindh. International Journal of Linguistics, Literature and Translation, 3(8), 01-09.

Sompong, K., Igel, B., & Lawton Smith, H. (2014). Strategic alliance motivation for technology commercialization and product development. Management Research Review, 37(6), 518-537.

Sultan, S. (2015). Syntactic errors in Pakistani undergraduate students' written English. Journal of Education & Social Sciences, 3(2), 245-259.

Talpur, Q., & Shah, Z. A. (2017). Error analysis of the English essays of undergraduate engineering students in Pakistan: A case study. ELF Annual Research Journal, 19, 63-78.

Tizazu, Y. (2014). A linguistic analysis of errors in the compositions of Arab Minch University students. Advances in Language and Literary Studies, 5(3), 195-205.

Wahid, R., & Farooq, O. (2019). The influence of derivational and inflectional morphological awareness on the writing of undergraduate EFL students: An empirical study. Arab World English Journal (AWEJ), 10(1), 242-258.