

A Psycholinguistic Study of English Article Acquisition Among Urdu L1ers

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Abstract

This paper aims to discover new insights into the problem of English article acquisition amongst Urdu L1ers. A total number of 1440 participants' responses in FCETs (forced choice elicitation tasks) have been investigated. The age groups included are 10 to 14 years, 15 to 17, 18 to 20, and 21 to 25. This research concludes that accuracy in article use increases with greater language input and with age; public schools' (10 to 14 years) low performance is due to the late start of English language teaching. The accuracy rate in the use of the English article by Urdu L1ers has been subjected to a two-way ANOVA. The results of the two-way ANOVA and regression analysis reject the null hypothesis. The findings of this study show that language input and age have a significant impact on accuracy in FCETs; with increased language input and age, accuracy in English article usage improves across all age groups. The findings of this study emphasise an increase in the amount of language input provided to students over successive years of their second-language learning. The findings also emphasise the importance of language input for effective acquisition of the English article. This study may be expanded to include age groups from the early school years through 25 years and beyond.

Keywords: Psycholinguistic Study, Urdu L1ers, Article Acquisition.

Introduction

Second language acquisition is inherently difficult (Han et al., 2023), as it is considered to have two prerequisites for second language learning (Ellis, 1989): the learner's inner mechanisms and the language input, which pose significant challenges to language learners (Le et al., 2024). However, to meet the challenges of second language acquisition, it is important that learners' knowledge and the language input they receive interact (Ipek, 2009).

The English language plays an important role in students' academic progress (Cook, 2016). It is therefore important to consider the numerous types and the problems involved in acquiring the English language (Wold, 2006). These problems relate to those actively involved in teaching learning situations (Akram, 2017).

Numerous studies have examined problems in English article acquisition (Abudalbh, 2016). Several studies across various L1 backgrounds have been conducted, but only a few have been conducted among Urdu L1 speakers (Zdorenko & Paradis, 2012). Ionin's Forced Choice Elicitation Tasks (FCETs) have been used over the last one and a half decades for research on English article acquisition among L1s other than Urdu (Atay, 2010). Tania Ionin, in her study, notes the Age of Arrival (AOA) of participants, which makes age a significant factor in the acquisition process (Ionin, 2003). From an Urdu L1 perspective, two pertinent studies among Urdu L1 speakers have been conducted in Pakistan (Ishaq, 2018; Pervaiz, 2016). Both works investigate English article acquisition among Urdu L1ers; however, their methodologies differ. Pervaiz (2016) uses FCETs, whereas Qudsia (2018) uses COMPs. Pervaiz includes participants

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at the matriculation level and above in his study. Qudsia includes undergraduate participants, whereas those of lower levels are not included in her study. In her study, Ionin recommends including participants from lower age groups and those from higher age brackets together in the same study (Ko et al., 2010). It is not just about language input; several other factors make second-language learning effective (Akram, 2017). It has been observed, especially in public schools in Pakistan, that teachers are unaware of modern language-teaching techniques. Most of them code-switch, which leads to a faulty understanding of the target language. Despite teachers' positive attitude towards modern technology, public school students suffer due to limited resources. Large class sizes and lengthy syllabi are major hindrances to students' progress in learning a second language.

In the current study, 4 age groups were included: 10 to 14 years, 15 to 17 years, 18 to 20 years, and 21 to 25 years, along with an examination of language input during classroom instruction. This enables the researcher to gain useful insights into the problem of English article acquisition among Urdu L1ers by determining whether there is an interaction between learners' knowledge and the language input they receive.

To explore the relationship between the age of the Urdu L1 learner and L2 English article acquisition, the following research questions have been formulated: -

Research Questions

1. What is the accuracy rate (frequency of correct answers) in the use of English articles by Urdu L1 (child and adult) speakers during the L2 acquisition of the English article system?
2. What is the rate of occurrence of substitution-type and omission-type errors?

Literature Review

Learning a language in addition to the first language is termed second language acquisition (Lightbown & Spada, 2021). The domain of SLA may justifiably be linked to many languages. However, while dealing with problems associated with learners of English as a second language, one enters the domain of English as a Second Language (ESL).

The field of SLA is inherently challenging. Not only to learners but also to theoreticians, especially those associated with cognitive processes. To study cognition, it is useful to obtain elicitation data (Gass et al., 2020). Knowledge elicitation is considered a sub-process of knowledge acquisition; therefore, it makes knowledge engineering possible (Shadbolt et al., 2015).

There have been several studies on the L2 acquisition of the English article system. The problem of article acquisition remains enigmatic. In the context of acquiring the English article system, L1 transfer is considered a major factor. L2 learners fluctuate between the two ACP settings until they acquire the correct responses. The [-article] languages possess no article system. It has been argued by Ionin et al. (2004) that learners with [-article] languages are expected to fluctuate more even at advanced levels. The Fluctuation Hypothesis provides assumptions about [-article] languages. According to the Fluctuation Hypothesis, L2 learners have full UG access to the two ACP settings, and they fluctuate until they receive sufficient input (Ionin et al., 2004). It has been suggested that including child learners may effectively resolve the problem. It has also been noted that no significant study has been conducted to date in this context, as child L2 acquisition is considered a good testing ground for investigating problematic structures (Zdorenko & Paradis, 2008). Ionin et al. (2008) argue that child learners are expected to converge on definiteness with greater ease and accuracy than adult learners of the same L1. This prediction may be tested through a comparative study that includes both (Paradis, 2011). In [+ article] languages, learners have been reported to converge more rapidly (Zdorenko & Paradis, 2012). On the contrary, [- article] languages do not have structures which match the target structures; therefore, learners with [-article] L1S converge at a slower pace

and make more errors (Ou et al., 2021). Two pertinent studies conducted in Pakistan with Urdu L1ers do not consider the school systems from which the learners come. Moreover, Pervaiz and Bukhari (2016) use Matric students as their youngest age group and MA students as their oldest age group. In this study, Ionin's Forced Choice Elicitation Tasks (FCETs) have been used. Hence, the cognitive levels below Matric and those beyond MA levels have not been included in this study. In another study, Ishaq (2014) investigates English article acquisition using COMPs (Compositions) as a data-collection tool. The study conducted by Ishaq (2016) does not include child learners either. The current study fills a gap in the research literature on English article acquisition among Urdu L1ers. The gap, in terms of age and language input has been covered: the current research includes participants from age bracket 10 to 14 years up to 21 to 25 years (hence both child and adult participants included in the same study); the current research takes participants from system and public schools which differ in terms of the amount of language input provided to the learners.

Research Methodology

The present research is correlational, as it seeks to explore the relationship between learners' age and L2 acquisition of English articles by Urdu L1 speakers. It investigates, in a cross-sectional examination, the L2 acquisition of English articles in child and adult Urdu L1 learners in the context of the 'fluctuation hypothesis' (Ionin, 2003). The role of language input, as reflected in school types (public and private), has also been considered. The amount of language input provided to the students varies depending on the system enrolled in (Warsi, 2004). There are, hence, two independent variables, viz., age (of the learner) and language input (school type). The dependent variables are the substitution and omission of definite (the) and indefinite (a) articles. To reveal the cognitive aspects involved in the acquisition and use of problematic linguistic structures, eliciting data may be useful (Pandey, 2025).

A purposive sampling method will be used to include participants from various schools and universities in Islamabad, Pakistan. A total number of 360 child participants from public schools (180 of 10-14 years of age; 180 of 15 to 17 years of age) and a total number of 360 adult participants (180 of 18 to 20 years of age; 180 of 21 to 25 years of age).

The Forced Choice Elicitation Task (Ionin et al., 2004) has been used to gain access to learners' cognitive processes. The forced-choice elicitation task provides insights into the relevant cognitive system; therefore, it is used here to reveal new insights into the processes involved in L2 acquisition of English.

Analysis & Discussion

The analysis was conducted by first entering students' responses to forced-choice elicitation tasks into SPSS, along with their demographic information: school type, first language (L1), and age. The entire data was coded for this purpose.

The two research questions address the accuracy rate in the use of English articles. To determine the rate of accuracy in the use of English articles, the percentage rates of omission and substitution of definite (the) and indefinite (a) articles for each participant were calculated for the 1-40 dialogues in Forced Choice Elicitation Tasks (FCETs). Accuracy rates in percentages were calculated for each of the forty dialogues, as well as each of the ten dialogue types (each type (1-10) including four dialogues in sequence) out of the forty dialogues.

The entire sample comprises 1440 responses from FCETs, consisting of 720 from university students (with tentatively expected numbers of 360 from public and the same from system schools each) and 720 from school students (with the same numbers from public and system schools each). Hence, a total of 1440 responses for FCETs were collected.

Table 1: Public School Age wise (10-14), (15-17), (18-20) & (21-25) Type-Wise Percentages

	Age Group 10-14 (n=111)			Age 15-17 (n=79)		
	Definite (The)	Indefinite (a)	Null (ø)	Definite (The)	Indefinite (a)	Null (ø)
Type 1	80.63	19.37	0.00	83.75	16.25	0.00
Type2	75.00	25.00	0.00	74.69	25.31	0.00
Type3	74.77	25.00	0.23	77.81	22.19	0.00
Type 4	71.62	28.38	0.00	72.19	27.81	0.00
Type 5	42.34	57.66	0.00	37.19	62.81	0.00
Type 6	41.44	58.56	0.00	35.31	64.69	0.00
Type 7	41.89	57.66	0.45	34.38	65.63	0.00
Type 8	42.57	56.53	0.90	38.75	60.94	0.31
Type 9	51.58	48.20	0.23	52.50	47.50	0.00
Type 10	39.86	57.43	2.70	43.59	56.41	0.00
	Age Group 18-20 (n=61)			Age 21-25 (n=57)		
	Definite (The)	Indefinite (a)	Null (ø)	Definite (The)	Indefinite (a)	Null (ø)
Type 1	95.08	4.92	0.00	92.86	6.25	0.89
Type2	95.08	4.92	0.00	90.63	8.93	0.45
Type3	92.21	7.38	0.41	90.63	8.04	1.34
Type 4	86.07	12.30	1.64	83.04	15.63	1.34
Type 5	10.66	88.93	0.41	20.09	79.46	0.45
Type 6	14.34	85.25	0.41	16.96	81.25	1.79
Type 7	12.30	87.70	0.00	18.75	80.36	0.89
Type 8	13.93	85.66	0.41	12.05	87.05	0.89
Type 9	65.83	34.17	0.00	59.38	40.63	0.00
Type 10	20.83	78.75	0.42	20.98	76.79	2.23

Table 1 indicates values for the rate of accuracy of participants from public schools across age groups. For a comparison of values across age groups within each type, it may be seen that for type 1, the values across age groups increase in the first three age groups however, the rate falls for the last age group, that is, 21 to 25 years. For type 2, the rate of accuracy falls from 75 % to 74.69 (15 to 17 years), it increases to 95.08 % for 18 to 20 years and falls again for 21 to 25 years to 90.63 %. This pattern of rise and fall supports fluctuation hypothesis. This pattern of rise and fall in the rate of accuracy may be seen in all the ten types. The values for type 9 are noteworthy. The rate of accuracy for public schools keeps on a rise, however it falls at age group 21 to 25 years to 59.38 %. The same pattern of fluctuating between correct and incorrect responses may be noted for type 10 as it falls from age group 10 to 14 years, 57.43 %, to 56.41 in age group 15 to 17 years, it rises in the next age group, (18 to 20 years) to 78.75 % and falls again to 76.79 % in the next age group, that is, 21 to 25 years.

The fall, rise, fall pattern supports the Fluctuation Hypothesis and indicates that the participants learn through fluctuating between correct and incorrect responses at various stages of their learning. Moreover, at university level, multiple factors are at work which contribute to the performance of participants in terms of their accuracy rate.

For a comparison of values across types within the same age group, it may be seen that in type 1 for the age group (10 to 14 Years) the accuracy rate falls from 80.63 % to 75 % in type 2, it falls further in type 3 and 4 to accuracy rates 74.77 % and 71.62 % respectively. The accuracy rate again falls in type 5 to 57.66 %, it rises from 6 to 58.56 %, falls again in type 7 to 57.66

%, further for type 8 to 56.23 % and in type 9 to 51.58 %. It rises however for type 10. The same pattern of fluctuation may be noticed for the age bracket of 15 to 17 years.

Table 2: System School Age and Type-Wise Percentages

	Age Group 10-14 (n=109)			Age 15-17 (n=130)		
	Definite (The)	Indefinite (a)	Null (ø)	Definite (The)	Indefinite (a)	Null (ø)
Type 1	96.99	3.01	0.00	97.45	2.08	0.46
Type 2	96.53	3.47	0.00	97.69	2.31	0.00
Type 3	94.68	5.32	0.00	95.83	4.17	0.00
Type 4	91.90	8.10	0.00	92.36	7.41	0.23
Type 5	13.89	86.11	0.00	14.58	85.42	0.00
Type 6	16.90	83.10	0.00	18.06	81.71	0.23
Type 7	15.51	84.49	0.00	12.27	87.73	0.00
Type 8	9.03	90.97	0.00	8.56	91.44	0.00
Type 9	75.46	24.54	0.00	72.5	27.5	0.00
Type 10	18.58	81.42	0.00	19.03	80.77	0.19
	Age Group 18-20 (n=118)			Age 21-25 (n=76)		
	Definite (The)	Indefinite (a)	Null (ø)	Definite (The)	Indefinite (a)	Null (ø)
Type 1	95.83	4.17	0.00	97.04	2.96	0.00
Type 2	95.37	4.63	0.00	90.46	9.54	0.00
Type 3	90.97	8.56	0.46	91.45	7.24	1.32
Type 4	90.28	9.72	0.00	83.88	15.79	0.33
Type 5	13.66	86.11	0.23	15.46	84.21	0.33
Type 6	15.28	84.49	0.23	10.20	89.14	0.66
Type 7	15.97	84.03	0.00	11.18	88.49	0.33
Type 8	14.58	84.95	0.46	9.87	89.14	0.99
Type 9	70.09	29.49	0.43	60.47	39.53	0.00
Type 10	19.87	79.70	0.43	20.27	77.03	2.7

Table 2 indicates accuracy values for participants from system schools across all age groups. For a comparison of values across age groups within each type, it may be seen that in type 1, the values are on a rise from age group 10 to 14 years (96.99 %) to 15 to 17 years (97.45 %). However, the accuracy rate falls in the age group 18 to 20 years (95.83 %). It rises for the age bracket 21 to 25 years (97.04 %). For type 2, the rate of accuracy falls from 96.53 % (in age group 10 to 14 years) to 97.69 % (in the age bracket 15 to 17 years). It falls to 95.37 % in the age bracket 18 to 20 years. The rise and fall may be explained in terms of the Fluctuation Hypothesis. It falls further to 90.46 % in the age bracket 21 to 25 years.

Post-Hoc Analyses

To confirm the validity and reliability of the results obtained through FCETs, two tests were employed: two-way Anova; regression analysis.

The two-way Anova procedures were used to determine the relation between independent variables (participants' age and the school type) and dependent variables (omission and substitution rates). To examine the extent to which independent variables predicted dependent variables in FCETs' responses, the following null hypothesis was formulated.

H₀: Performance is independent of age and language input (as represented by school system).

Table 3: ANOVA results for Tables 1 and 2

ANOVA					
	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	3865.76	1932.88	17.51	5.39103E-07
Residual	77	8499.25	110.38		
Total	79	12365.01			

Two-way ANOVA procedures reject null hypothesis. The results obtained indicate that F value (17.51) is greater than significance F (5.39103E-07). The results hence reject the null hypothesis; the alternative to null hypothesis is confirmed i.e., performance is dependent upon age and school system.

Regression Analysis

To further examine the impact of independent variables on dependent variables, regression analysis was conducted. Regression analysis enables the researcher to examine variables simultaneously (Plonsky & Ghanbar, 2018).

Application of Regression Analysis to School Systems (n= 741)

The overall sample (n=1440) was filtered for school types viz., public and system. The school types were further filtered for Urdu L1ers which gave us a total number of 308 participants from the public and a total number of 433 participants for system schools. The total number of participants subjected to regression analysis was (public: 308; system: 433) '741' participants. The percentage performance results of FCETs of 741 participants (inclusive of both school types) were subjected to regression analysis to determine the validity and reliability of results.

Table 4: FCET Regression Results for Type I Target Article 'the'

Model		Unstandardized Co-efficient		Standardized Coefficients	t-value	p-value
		B	Std. Error	Beta		
1	(Constant)	83.92	1.131		74.174	.000
	School-Type	9.68	1.107	.304	8.738	.000
	Age 15-17	2.53	1.428	.073	1.771	.077
	Age 18-20	5.52	1.493	.150	3.696	.000
	Age 21-25	5.85	1.622	.143	3.607	.000

Table 4 indicates regression analysis results for type I. Here the value of the first co-efficient which is also termed as constant/intercept/base category/ benchmark is 83.92 %. This value shows that if an individual belongs to public-school then his/her average score of definiteness is 83.92 %. The standard error of this coefficient is 1.13 while the t value is 74.17. The high magnitude of t value shows that the base category is statistically significant. The next coefficient is for school type. If the individual belongs to a system-school, then the value of this dummy variable will be 1. The coefficient of the school type (individual from a system school) is 9.68 which shows that an individual from system school gets 9.68 % higher score in definiteness as compared to that of a public school (83.92). Moreover, the base category is 10 to 14 years. In this category the average score is 83.92 %. This category is also considered a base category or benchmark, not only to the system (public and/or system), but also to the rest of the age groups. The coefficient of Age group 15 to 17 years is 2.53 % more as compared to the base category (which is 10 to 14 years). The statistical significance of the coefficient of this age group is not statistically significant at a level below 5 % level of significance, however it becomes significant at 7 % level of significance. This can be confirmed by the p value in the

last column of the table which is 0.07. In primary data, an analysis of even more than 10 % (Chatterjee & Simonoff, 2013) is considered satisfactory for research and policy suggestions and/or recommendations. The second last coefficient of the above table is a representative of the age group 18 to 20 years. The coefficient of this specific variable is 5.52. Here the magnitude of the coefficient shows that if an individual belongs to this age group, then he/she will get 5.52 % higher scores in definiteness as compared to the age group of base categories (10 to 14 years). In the last row of the table the coefficient value of participants of age group 21 to 25 years. The coefficient is 5.85. That is also statistically significant. If we compare the coefficient with the base category, then it reveals that the score for a higher age category is 5.85 % more in definiteness as compared to the base category. If we compare all the four age groups with each other, one can confirm that with an increase in age the score of definiteness is on an increased mark.

Now the study moves from specific variables' significance to the overall significance of the model. In statistics, the overall significance of any model is measured through R^2 and F statistics. The value of R^2 in the above model is 0.13 which explains that 13 % variation in definiteness comes from school type and age groups while the value of F statistics shows that the joint significance of all parameters of a model. (If F is = and/or > 10, it shows that at least one of the independent variables has a statistically significant impact on dependent variables, which is definiteness in the above table.

Table 5: FCET Regression Results for Type II Target Article 'the'

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	79.29	1.47		53.88	.000
	School-Type	13.09	1.44	.32	9.09	.000
	Age 15 to 17	1.80	1.86	.04	.97	.332
	Age 18 to 20	7.61	1.94	.16	3.92	.000
	Age 21 to 25	3.80	2.11	.07	1.80	.072

Table 5 indicates regression analysis results for type II. Here it may be seen that with every year increase in years of age, the performance improves for both the systems viz., public and system schools both. Also, it may be seen that the performance of system schools' participants is greater in scores than that of public schools. The coefficient of Age group 15 to 17 years is 1.80 more as compared to the base category 10 to 14 years. The statistical significance of the coefficient of this age group, interestingly, is not statistically significant at a level below 5 % level of significance however coefficient is significant at 7 % level of significance. In primary data, an analysis of even more than 10 % (Golberg & Cho, 2004) is considered satisfactory for research and policy suggestions and/or recommendations.

Table 6: FCET Regression Results for Type III Target Article 'the'

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	79.28	1.35		58.66	.000
	School-Type (Dum)	10.81	1.32	.29	8.17	.000
	15 to 17 years	2.87	1.71	.07	1.68	.093
	18 to 20 years	5.35	1.78	.12	3.00	.003
	21 to 25 years	5.67	1.94	.12	2.93	.004

Table 6 indicates regression analysis results for Type III. Here it may be seen that with every year increase in years of age, the performance improves for both the systems viz., public and system schools both. Also, it may be seen that the performance of system schools' participants is greater in scores than that of public schools.

Table 7: FCET Regression Results for Type IV Target Article 'the'

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	75.22	1.70		44.35	.000
	School-Type	12.87	1.66	.28	7.75	.000
	Age 15 to 17	1.83	2.14	.04	.85	.393
	Age 18 to 20	5.27	2.24	.10	2.36	.019
	Age 21 to 25	1.19	2.43	.02	.49	.626

Table 7 indicates regression analysis results for type I Here it may be seen that with every year increase in years of age, the performance improves for both the systems viz., public and system schools both. Also, it may be seen that the performance of system schools' participants is greater in scores than that of public schools.

Table 8: FCET Regression Results for Type V Target Article 'the'

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	56.218	2.250		24.990	.000
	School Type	13.998	2.202	.229	6.358	.000
	D1	-.093	2.840	-.001	-.033	.974
	D2	2.990	2.968	.042	1.007	.314
	D3	-4.323	3.226	-.055	-1.340	.181

Table 8 indicates regression analysis results for type V. Here it may be seen that with every year increase in years of age, the performance improves for both the systems viz., public and system schools both. Also, it may be seen that the performance of system schools' participants is greater in scores than that of public schools.

Table 9: FCET Regression Results for Type VI Target Article 'the'

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	64.141	2.094		30.635	.000
	School Type	15.496	2.044	.266	7.580	.000
	D1	3.135	2.638	.049	1.188	.235
	D2	12.795	2.756	.191	4.642	.000
	D3	9.062	2.996	.121	3.025	.003

Table 9 indicates regression analysis results for type VI. Here it may be seen that with every year increase in years of age, the performance improves for both the systems viz., public and

system schools both. Also, it may be seen that the performance of system schools' participants is greater in scores than that of public schools.

Table 10: FCET Regression Results for Type VII Target Article 'the'

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	62.215	1.733		35.900	.000
	School Type	15.483	1.692	.311	9.153	.000
	D1	3.992	2.184	.073	1.828	.068
	D2	12.494	2.282	.218	5.476	.000
	D3	14.652	2.475	.229	5.921	.000

Table 10 indicates regression analysis results for type VII. Here it may be seen that with every year increase in years of age, the performance improves for both the systems viz., public and system schools both. Also, it may be seen that the performance of system schools' participants is greater in scores than that of public schools.

Table 11: FCET Regression Results for Type VIII Target Article 'the'

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	64.184	2.089		30.720	.000
	School Type	14.721	2.039	.254	7.219	.000
	D1	4.889	2.633	.077	1.857	.064
	D2	11.726	2.751	.176	4.263	.000
	D3	12.367	2.983	.166	4.145	.000

Table 11 indicates regression analysis results for type VIII. Here it may be seen that with every year increase in years of age, the performance improves for both the systems viz., public and system schools both. Also, it may be seen that the performance of system schools' participants is greater in scores than that of public schools.

Table 12: FCET Regression Results for Type IX Target Article 'the'

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	64.054	2.001		32.006	.000
	School-Type	20.259	1.953	.353	10.371	.000
	D1	2.173	2.522	.035	.862	.389
	D2	7.787	2.635	.118	2.955	.003
	D3	12.716	2.858	.173	4.450	.000

Table 12 indicates regression analysis results for type IX. Here it may be seen that with every year increase in years of age, the performance improves for both the systems viz., public and system schools both. Also, it may be seen that the performance of system schools' participants is greater in scores than that of public schools. It may be noted that the coefficient for the age group 15 to 17 years is 2.17 % more as compared to the base category (which is 10 to 14 years). The statistical significance of the coefficient of this age group, interestingly, is not statistically significant at a level below 5 % level of significance. It becomes significant at 38.9 % level of significance. This can be confirmed by the p value in the last column of the table which is 0.389. In primary data, an analysis of even more than 10 % is considered satisfactory for research and policy suggestions and/or recommendations (Chatterjee & Simonoff, 2013).

Table 13: FCET Regression Results for Type X Target Article 'a'

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	61.980	2.183		28.386	.000
	School-Type	14.701	2.136	.245	6.882	.000
	15 to 17 Years	.766	2.757	.012	.278	.781
	18 to 20 years	7.658	2.881	.111	2.658	.008
	21 to 25 years	7.815	3.125	.101	2.501	.013

Table 13 indicates regression analysis results for type X. Here, the value of the base category is 61.98 %. It shows that if an individual attends a public school, their average score for definiteness is 61.98%. The standard error of this coefficient is 2.183, while the t value is 28.386. The high t-value indicates that the base category is statistically significant (Ugoni & Walker, 1995). The next coefficient is for school type: if the individual belongs to a system-school, the value of this dummy variable will be 1. The coefficient for school type (individual from a system school) is 14.70, indicating that an individual from a system school receives 14.70% more score for indefiniteness than a public school (64.05). Moreover, the base category is 10-14 years. In this category, the average score is 61.98%. This category is also considered a base category or benchmark for the remaining age groups. The coefficient for the Age group 15 to 17 years is 0.766, indicating that participants in this age group will score 76.6% more than the base category. The coefficient for this age group is not statistically significant at the 5 % level; however, it becomes significant at the 7.81 % level. This can be confirmed by the p-value in the last column of the table, which is 0.781. In primary data, an analysis of more than 10 % is considered satisfactory for research and policy suggestions and/or recommendations (Chatterjee & Simonoff, 2013). The second-to-last coefficient in the table above corresponds to the age group 18-20 years. The coefficient for this variable is 7.79, which is significant even at the 0.008 level (0.8%). Here, the magnitude of the coefficient indicates that individuals in this age group will get 7.658% higher scores in definiteness than those in the base category (10 to 14 years). In the last row of the table, the coefficient value is for participants aged 21-25 years. The coefficient is 7.82. That is also statistically significant. If we compare the coefficient with the base category, it shows that the score is 7.82% higher for indefiniteness than for the base category. When comparing all four age groups, we can confirm that, with increasing age, the score for indefiniteness also increases.

Now the study moves to the significance of specific variables to the overall significance of the model. In statistics, the overall significance of any model is measured through R² and F-statistics. The R² value in the above model is 0.03, indicating that 3.0% of the variation in indefiniteness is explained by school type and age groups, while the F statistic (2.04) indicates

the joint significance of all model parameters. (If F is $\geq$ and/or > 10 , it shows that at least one of the independent variables has a statistically significant impact on the dependent variables). The F value is statistically significant as per the criteria.

It is important to note that if the results of a test are not statistically significant, it doesn't mean that the null hypothesis has been proven (Bonovas & Piovani, 2023). In fact, the correct statement in relation to testing a hypothesis would be "we failed to reject the null hypothesis" (p.2) and not that "we accepted the null hypothesis" (p.2). It may therefore be concluded that the results in the regression analysis, which were not statistically significant, have failed to reject the null hypothesis.

The percentage values for FCETs and their subjection to two-way ANOVA and regression analysis indicate that the independent variables are good predictors of dependent variables (see tables 3-13).

Conclusion

The results of FCETs clearly reveal the accuracy rates in the use of definite and indefinite articles among participants in public and system schools in the age groups 10 to 14, 15 to 17, 18 to 20, and 21 to 25 years.

The Rate of Accuracy in Article Use as Indicated in FCETs Data

The accuracy rate in system-school participants' performances is higher than that of public-school participants (type 1: 96.99% > 80.63%; age bracket: 10 to 14 years). The participants in both systems fluctuate, and their performance rises and falls as percentages, as shown in Tables 1 and 2.

The Rate of Omission of Definite Article as Indicated in FCETs

For definite-article-omission rates, percentage rates (in columns of scores for 'Null' as indicated by types 1-4 and type 9) in Tables x and y (for public-school and system school omission of definite article rates respectively) will be compared. For public school participants, the omission rate for the definite article (as represented by types 1-4 and type 9) is zero across the first three age groups (10-14, 15-17, and 18-20). In other words, in these age groups, there is no omission for types 1 and 2. In the age group 21 to 25 years, participants omit definite articles at rates of 0.89 and 0.45, respectively, for types 1 and 2. From type 3 onwards, the rate of omission of the definite article increases with an increase in the cognitive level of participants and their age. In system-school participants, the omission rate of the definite article is zero for the 10 to 14-year age group. In the age group 15 to 17 years, it is 0.46% for type 1 and 0.46% and 0.43% for types 3 and 9, respectively, in the age bracket 18 to 20 years. In the next age group, the omission rate rises to 1.32% for type 3; however, for type 9, it remains 0%. It may therefore be established that the overall performance in rates of omission across systems is higher for public schools. It may also be established that in public schools, Participants' performances show an omission from age group 10 to 14 years, whereas in the same age bracket, it is absolute zero in system schools. Omission of the definite Article occurs in more types in the age bracket 15 to 17 years in system-schools (types 1 and 4) as compared to those in public (type 9). In 18 to 20 years, the omission of definite articles occurs in different types, viz., 3 and 9. The omission rate in the 21 to 25 years age bracket for system schools is 1.32 % for types 3 and 4, respectively, whereas for public school participants in the same age group, it is 0.89 %, 0.45 %, 1.34 % and 1.34 %, respectively. Hence, in public schools participants, omission occurs in the first four types, whereas in system-schools participants, it occurs only in types 3 and 4.

The Rate of Omission of Indefinite Article as Indicated in FCETs

For indefinite-article-omission rates, percentage rates (in columns of scores for 'Null' as indicated by types 5-8 and type 10) in Tables x and y (for public-school and system school omission of indefinite article rates, respectively) will be compared. For public-school participants, omission of the definite article occurs in all age groups, except for types 5 and 6 (10 to 14 years); types 5, 6, 7, and 10 (15 to 17 years); and type 7 (18 to 20 Years). For the 21 to 25 years age bracket, interestingly, public-school participants are omitted in all Types; hence, omission persists among public-school participants in this age bracket.

The Rate of Substitution of Definite Article as Indicated in FCETs

For definite-article-substitution rates, the percentage rates (in columns of scores for 'Indefiniteness' as indicated by types 1-4 and type 9) in Tables 1 and 2 (for public-school and system school substitution of definite article rates, respectively) will be compared. For public-school participants, the rate of substitution of definite article by indefinite article falls in the age group 15 to 17 years in types, except for type 2, where there is an increase (compared to the previous age group) of only 0.31 %. The substitution percentage falls drastically in the age bracket 18 to 20 years, with no exception for types. Interestingly, for the age bracket 21 to 25 years, the percentage occurrence of substitution (of the definite article, as seen in scores for indefiniteness) rises for all types except type 3. For system-school participants, substitutions occur across all types; there are no zero occurrences. The rate of substitution (of Definite article by Indefinite article) falls from age bracket 10 to 14 years to age bracket 15 to 17 years for types 1-4. However, for the age bracket 18 to 20 years, it rises in type 1 (4.17 % > 2.08 %); rises in type 2 (4.63 % > 2.31 %); rises in type 3 8.56 % > 4.17 %; rises in type 4 (9.72 % > 7.41 %). In the age bracket 21-25 years, the rate of substitution falls for type 1 (2.96 % < 4.17), rises for type 2 (9.54 > 4.63 %), falls for type 3 (7.24 % < 8.56 %), and rises again for Type 4 (15.79 % > 9.72 %). Interestingly, the rate of substitution (of definite article by indefinite article by system-school participants) fluctuates for all types except for type 9, for which it remains on a constant rise (39.53 % > 29.49 % > 27.5 % > 24.45 % in age groups 21-25, 18-20, 15-17, 10-14 years respectively). Hence, it may be established that the performance of system school participants (in terms of rate of substitution of definite article by the indefinite article) is better in their use of definite article as the overall percentage scores (of substitution of definite article) are lower for system-schools (in public, for age 10 to 14 years, substitution occurs at a rate of 19.37 whereas in system, it occurs at a rate 3.01 in the same age bracket for type 1). The constant decline in substitution rates in public schools and the fluctuations in the system-schools may be explained by the fact that students who move from public schools to other systems may enter the system at any level. This entry of public-school background students into system schools causes fluctuations in substitution rates, as shown in Tables 1 and 2.

The Rate of Substitution of Indefinite Article as Indicated in FCETs

- For indefinite-article-substitution rates, the percentage rates (in columns of scores for 'definiteness' as indicated by types 5-8 and type 10) in Tables 1 and 2 (for public-school and system school substitution of indefinite article rates respectively) will be compared. For public-school participants, it may be observed that the substitution (of indefinite article by definite article) rates decline persistently from the 10-14 years age bracket to the 15-17 and 18-20 years age brackets in all types, except type 10. In the 21-25 age bracket, results rise across all types. The substitution results for type 10 increase across the age bracket 15-17 years, then fall dramatically in the age bracket 18-20 years. There is a slight increase in the 21-25-year age bracket for type 10. The dramatic fall in the 18-20-year-old age bracket (20.83 %) from 15 to 17 years (43.59 %) may be attributed to the fluctuation hypothesis. Within the age bracket, participants differ in terms of educational backgrounds and

understandings of article use. As they advance, they develop a better understanding of the article's use. For system schools, again, there is a greater degree of fluctuation as indicated by substitution rates.

- The current study supports the fluctuation hypothesis, as students in both systems fluctuate during learning. The language input is represented by the type of system in which the students are registered. The learner's age is represented by the grade level. A wide difference in the elicitation data collected from students may be attributed to the difference in the amount of language input provided during language learning.

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