

Investigation of Language Skills in Adolescents with Poor Scholastic Performance

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ABSTRACT

Adolescent language development is subtle, but it is thought to be crucial because it lays the foundation for all aspects of learning, including interacting with peers and teachers in the classroom as well as throughout the rest of their lives as they grow into adults. The need for this study became evident at this point as there are only a few studies available that look at the language skills of the Indian adolescent population. The study aimed to analyze the language skills of school-going adolescents, aged 10 to 16 years. The primary objective was to investigate language performance in relation to scholastic performance using the test material, the Manipal Manual of Adolescent Language Assessment (MMALA) While evaluating the test results based on scholastic performance, greater Mean scores were obtained for above-average students in all the test domains when compared to below-average students. There was a highly significant difference between the groups which indicates that below-average students had significantly poorer language scores when compared to above-average students which indicate that language skills have a significant impact on a student's academic success.

KEY WORDS: Adolescent language development, figurative language, scholastic performance

INTRODUCTION

Language is an essential skill for human existence at all stages of life. Although most language development takes place from infancy through the preschool years, it is discovered that language development continues throughout adolescence as well. Nippold (1998) proposes that this type of language, normally learned by children in the adolescent years, can be termed later language development. According to Nippold, Mansfield, & Billow (2007), language performance in adolescence is difficult to measure as the development in this stage is marked by a subtle and gradual improvement in skills. Therefore, these changes may not be obvious unless the group is widely separated and studied. Development beyond the preschool years becomes especially evident when the focus is

on literate language tasks (Nippold, 2000). Unrecognized and unresolved scholastic backwardness has a long-term impact on the adolescent, affecting school completion, higher education, interpersonal relationships, employment prospects, and so on (Sukumaran,2011). As a result, developing language skills is critical for every child's progress in later life, both as a social being and in pursuing an education. The main development in adolescent language takes place through extensive and enthusiastic reading along with educational exposure and social experiences (Locke & Bogin, 2006). They become proficient in switching between styles of language which may be based on figurative expressions. This ability to use sophisticated linguistic expressions has been linked to academic competency and social acceptance. In the relevant context, the

present study is designed to investigate the language skills of adolescents, in the age range of 10 to 16 years, with respect to scholastic performance, syllabus followed, age, and gender.

Purpose of the study

Language proficiency is very important in academics. History, geography, science, and mathematics have traditionally been regarded as "knowledge subjects" or "non-linguistic subjects," in which language is not considered to be an integral part of learning, except when learning subject-specific terminology. Many stakeholders now believe that "no matter what the subject, all knowledge building in the school context involves working with language" (Beacco et al., 2010). As a result, language is important in all aspects of learning. The major focus of language research has always been on infancy and early childhood, with less emphasis on adolescence and early adulthood (Owens, 2004). Though many linguistic skill assessments are conducted at the primary level, such evaluations must also be continued into middle and high school to determine the remediation goals for older children.

Significance of the study

The particular relevance of analyzing language in the Indian adolescent population emerges at this point where there is an unavailability of studies on the comparison of language skills in poor academic achievers. Wherefore, this study is designed to assess the language skills of adolescents (10 to 16 years) with respect to their scholastic performance.

Aim of the study

The study aims to assess language skills in adolescents (10 to 16 years) with poor academic achievement.

Objective of the study

The main objective of the study is to analyze and compare the language abilities of

adolescent students with above-average and below-average academic performance.

METHODS

The study was conducted in four stages:

Phase 1: Development and validation of the Grade level assessment checklist

Phase 2: Administration of the Grade level assessment checklist.

Phase 3: Administration of the standardized test material the Manipal Manual of Adolescent Language Assessment (MMALA), developed by Karuppali and Batt, (2016), in auditory modality to all the participants.

Phase 4: Statistical Analysis

Participants

Children from the Kollam and Kasaragod districts, studying in grades 5 through 10, served as the participants. The study included 120 school-aged adolescents ranging in age from 10 to 16 years old. Participants were placed into groups based on their age, gender scholastic performance, and modality used. The whole participant group was separated into 3 groups, consisting of 40 individuals, with ages ranging from 10 to 11.11, 12 to 13.11, and 14. to 15.11.

Control group

Adolescent students of the specified age range who have been attending English medium schooling since lower primary classes, who scored above 60 on the grade level assessment checklist, and who were able to meet the cut-off score of 5 in each section of the developed screening checklist with above average academic performance were chosen for the study

Exclusion criteria

Individuals with language learning disabilities

Individuals with a history of psychological illness and any neurological illness

Individuals who are physically challenged (sensory loss, motor deficits)

Individuals with cognitive disabilities

Experimental group

Adolescent students of the specified age range who have been attending English medium schooling since lower primary classes, who scored below 35 on the grade level assessment checklist, and who were able to meet the cut-off score of 5 in each section of the developed screening checklist with below-average academic performance were chosen for the study.

Exclusion criteria

Individuals with language learning disabilities
Individuals with a history of psychological illness and any neurological illness
Individuals who are physically challenged (sensory loss, motor deficits)
Individuals with cognitive disabilities

MATERIALS

Screening checklist.

Grade-level assessment checklist

Standardized test material - Manipal Manual of Adolescent Language Assessment (MMALA)

Phase 1: Development and Validation of Screening Checklist and Grade Level Assessment Checklist

To screen and select study participants, a screening checklist, consisting of two parts (Part A and Part B), was developed and validated. Questions were developed after reviewing already available screening material, Language Experience and Proficiency Questionnaire (Marian et al., 2007) & questionnaire, Screening Checklist for Auditory Processing Disorder (Yathiraj & Mascarenhas, 2003). Part A consisted of demographic data regarding the name, age/gender, grade, school name, syllabus followed, and medium of instruction and Part B addressed details regarding general health, auditory processing issues, English language competency, and linguistic and cognitive abilities. The Cut-off score selected for each sub-section was 5 and students who failed to meet the cut-off score were eliminated from the study. The developed checklist was validated by ten

speech-language pathologists and their suggestions were also incorporated before the administration of the checklist.

The Grade Level Assessment Checklist was developed after reviewing the already available material, Checklist to Screen Children with Reading Difficulty (CSRD) for Classroom Teachers (Namita & Vanaja, 2016). The developed checklist was validated to evaluate the student's overall academic performance and to categorize participants into above-average and below-average categories.

Part A of the grade-level assessment checklist consisted of demographic data and Part B addressed the general & academic performance of the participant. The total score of the checklist was 100. Students with a total score above 60 were categorized as above average, a score between 35 and 60 was classified as average, and a total score below 35 was classified as below average academic performers. The developed checklist was given to 15 school teachers and 10 speech-language pathologists for validation and their suggestions were also incorporated before the administration of the checklist.

Phase 2: Administration of Screening Checklist and Grade Level Assessment Checklist

Screening checklist and Grade Level Assessment Checklist were given randomly to teachers of grades 5th to 10th one week before phase 3. The Grade Level Assessment Checklist was administered to evaluate the student's overall academic performance. Participants were divided into two groups based on the results of the checklist and the students' yearly progress reports, as well as the teacher's feedback on their overall academic performance.

Phase 3: Administration of the Standardized Test Material

The participants were administered the test material Manipal Manual of Adolescent Language Assessment (MMALA), developed by Karuppali and Batt, (2016), in the auditory modality. The domains assessed were semantics, analogical reasoning,

morphological derivations, and figurative language skills. The time taken for administration of the standardized test material was about 30 to 40 minutes in the auditory modality.

Domain A: Semantics

a) Contrastive relations task (Auditory)

0-Incorrect response

1-correct response

Total score =5*1=5

b) Multiple Meaning task (Auditory)

0-Incorrect response

1-correct response

Total score =5*1=5

c) Associative relation task (Auditory)

0-Incorrect response

1-correct response

Total score =5*1=5

d) Convergent naming task (Auditory)

0-Incorrect response

1-correct response

Total score =5*1=5

e) Double function words task (Auditory)

0-Incorrect response

1-correct response

Total score =5*1=5

Domain 2: Analogical reasoning skill

a) Analogical reasoning task (Auditory)

0-Incorrect response

1-correct response

Total score =5*1=5

b) Compare/contrast task (Auditory)

0-Incorrect response

1-correct response

Total score =5*1=5

Domain 3: Morphological derivation skills

0-Incorrect response

1-correct response

Total score =5*1=5

Domain 4: Figurative language skills

a) Similes (Auditory)

0-Incorrect response

1-correct response

Total score=30*1=30

Following the administration of the test material, the results were further documented for statistical analysis.

PHASE 4: STATISTICAL ANALYSIS

The comparison of the individual groups based on each objective was done using test statistics. SPSS 26, the latest version of the statistical protocol for social sciences, was used. Mean and standard deviation values have been calculated for all participants across the whole domain of the test material. As there was a total score difference in the figurative language domain, normalization was done to change the values of the numerical column to a normal scale, without distorting the difference in the ranges of values. Mann-Whitney Z test, independent sample t-test, and Kruskal Wallis (H) test were employed to determine the significant difference between the groups.

Ethical considerations

Before data collection, a consent letter has been obtained from the respective educational institution to which the subjects/participants of the study belong.

A consent letter has been obtained from the parents of subjects/participants in the study requesting permission to involve their children in the study and assuring them that this will not interfere with their regular academic activities in any way.

It was approved by the Institutional Ethics Committee (IEC)

RESULTS

To Analyze and Compare the Language Abilities of Adolescent Students with Above-Average and Below-Average Academic Performance

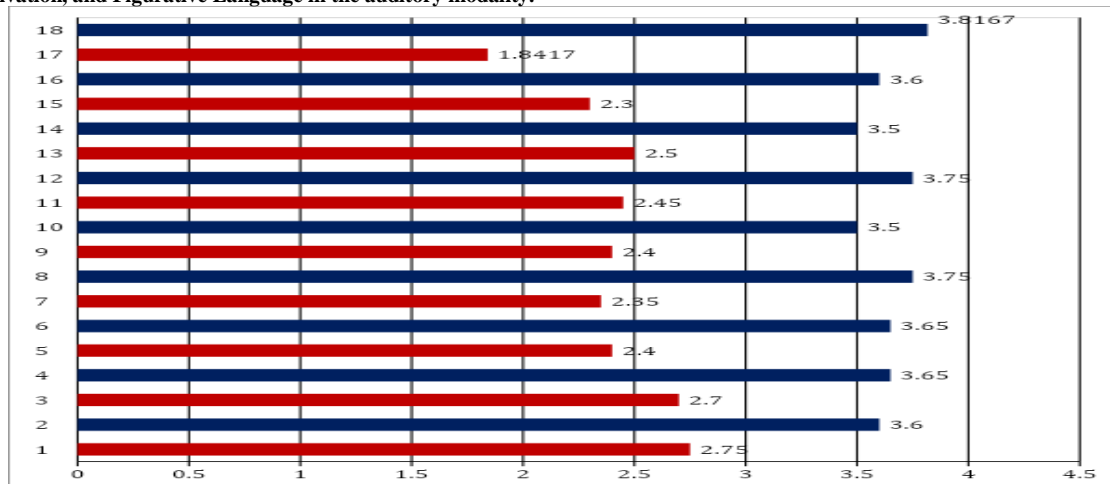
Based on the result obtained from the screening checklist and the grade level assessment checklist, the total number of participants was divided into two groups; Above average (GA) and Below average (GB). Based on age, the subjects were further grouped into 3 age groups: 10-11.11 (G1A&G1B), 12-13.11(G2A&G2B), and 14-15.11(G3A&G3B) with each group consisting of 20 participants respectively.

The Mean and standard deviation of each domain were determined based on the data obtained. Mann-Whitney Z test/ /

Independent sample t-test (T) was employed to determine the significant difference between the groups.

The tasks for the auditory modality were administered to the participants verbally by asking the questions included in each domain.

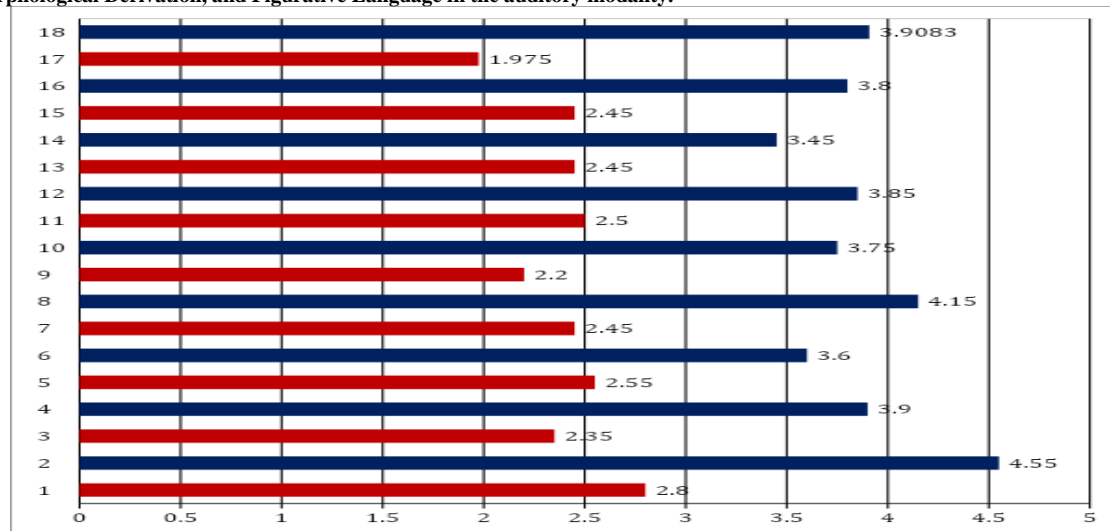
Figure 1.a1 Mean values of groups G1A & G1B (10-11.11) across the domains of Semantics, Analogical Reasoning, Morphological Derivation, and Figurative Language in the auditory modality.



While analyzing the result of G1AC, it is noted that Similes/ metaphors task (3.9083) obtained the highest mean score, and the Double function word task (3.5000) & compare and contrast task (3.5000) obtained the lowest mean scores. While analyzing the

results of G1BC, the highest mean scores were obtained for the Contrastive relations task (2.7500), and the lowest mean scores were obtained for the Similes/metaphors task (1.8417).

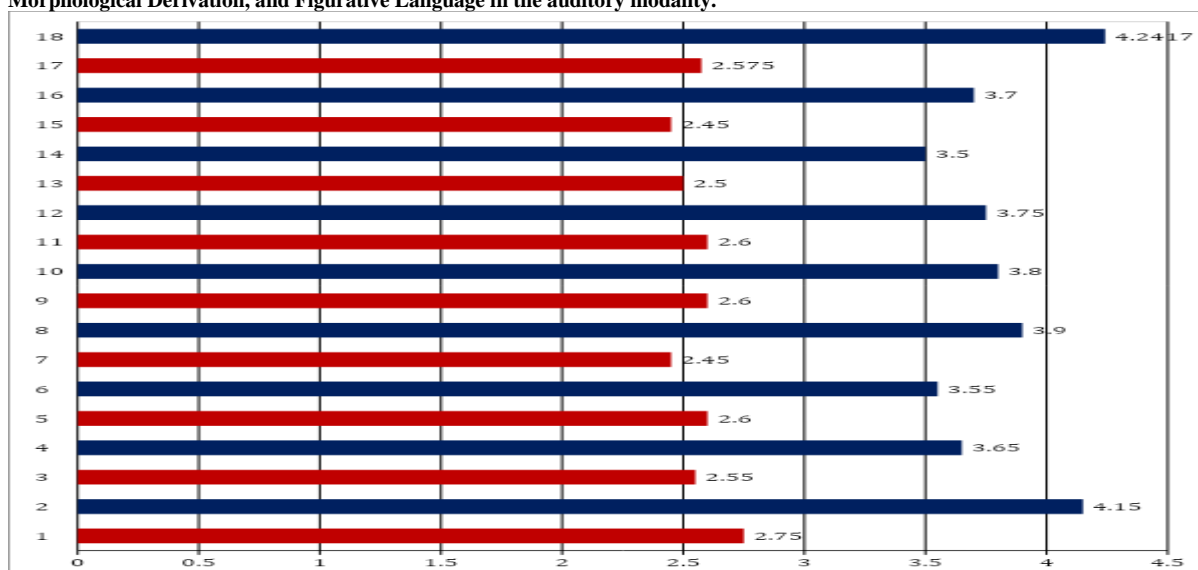
Figure 1.a2 Mean values of groups G2AC & G2BC (12-13.11) across the domains of Semantics, Analogical Reasoning, Morphological Derivation, and Figurative Language in the auditory modality.



While analyzing the result of G2AC, the highest mean scores were obtained for the Contrastive relations task (4.5500), and the lowest mean scores were obtained for Compare/contrast task (3.4500). While

analyzing the result of the G2BC group, the highest mean scores were obtained for the Contrastive relations task (2.4500) and the lowest mean scores were obtained for the similes/metaphors task (1.9750).

Figure 1.a3 Mean values of groups G3AC & G3BC (14-15.11) across the domains of Semantics, Analogical Reasoning, Morphological Derivation, and Figurative Language in the auditory modality.



While analyzing the results of G3AC, the highest mean scores were obtained for the similes/Metaphors task (4.2417) and the lowest mean scores were obtained for the Associated relations task (3.5500) & compare/contrast task (3.5000). While analyzing the results of the G3BC group the highest mean scores were obtained for the Contrastive relations task (4.1500) and the lowest mean scores were obtained for the Convergent naming task (2.4500) & compare/contrast task (2.5000).

Among all the three age ranges, it was observed that the below-average category required more time to complete the task frequently asked for word meanings, and demanded more clarifications on the test items provided to them. Greatest Mean scores were obtained for G1AC, G2AC, and G3AC for all test domains when compared to G1BC, G2BC, and G3BC, which shows that above-average students scored better than below-average students.

Table 1.1 Mean, Standard Deviation, and Mann Whitney(Z) test results of above-average students and below-average students across the age groups G1, G2, and G3 across the domains of Semantics, Analogical Reasoning, Morphological Derivation and Figurative Language in the auditory modality.

Domain	Age range	Task	Group	N	Mean	Std. Deviation	Mann Whitney (Z) statistic	p-value
Semantics	10-11.11 Years	Contrastive Relation	Below Average (G1BC)	20	2.7500	.44426	Z= 4.093	.000
			Above Average (G1AC)	20	3.6000	.59824		
		Multiple Meaning	Below Average (G1BC)	20	2.7000	.47016	Z= 3.967	.000
			Above Average (G1AC)	20	3.6500	.74516		
		Associated Relation	Below Average (G1BC)	20	2.4000	.50262	Z= 4.820	.000
			Above Average (G1AC)	20	3.6500	.58714		
		Convergent Naming	Below Average (G1BC)	20	2.3500	.58714	Z= 5.011	.000
			Above Average (G1AC)	20	3.7500	.55012		
		Double Function Words	Below Average (G1BC)	20	2.4000	.59824	Z= 4.516	.000
			Above Average (G1AC)	20	3.5000	.51299		
Analogical Reasoning		Analogical Reasoning	Below Average (G1BC)	20	2.4500	.60481	Z= 4.727	.000

			Above Average	20	3.7000	.63867				
		Compare/ Contrast	Below (G1BC)	Average	20	2.5000	.51299	Z= 4.081		
			Above (G1AC)	Average	20	3.5000	.68825		.000	
Morphological Derivation		Morphological Derivation	Below (G1BC)	Average	20	2.3000	.57124	Z= 4.921		
			Above (G2AC)	Average	20	3.6000	.50262		.000	
Figurative Language		Similes/ Metaphor	Below (G1BC)	Average	20	1.8417	.26199	Z=-5.434		
			Above (G1AC)	Average	20	3.8167	.54585		.000	
Semantics	12-13.11 Years	Contrastive Relation	Below Average (G2BC)	Average	20	2.8000	.41039	Z= 5.504		
			Above (G2AC)	Average	20	4.5500	.60481		.000	
		Multiple Meaning	Below (G2BC)	Average	20	2.3500	.58714	Z= 5.218		
			Above (G2AC)	Average	20	3.9000	.55251		.000	
		Associated Relation	Below (G2BC)	Average	20	2.5500	.51042	Z= 4.289		
			Above (G2AC)	Average	20	3.6000	.68056		.000	
		Convergent Naming	Below (G2BC)	Average	20	2.4500	.51042	Z= 5.109		
			Above (G2AC)	Average	20	4.1500	.74516		.000	
		Double Words Function	Below (G2BC)	Average	20	2.2000	.52315	Z = 5.100		
			Above (G2AC)	Average	20	3.7500	.71635		.000	
		Analogical Reasoning		Analogical Reasoning	Below (G2BC)	Average	20	2.5000	.51299	Z= 4.716
					Above (G2AC)	Average	20	3.8500	.74516	
Compare/ Contrast	Below (G2BC)			Average	20	2.4500	.51042	Z= 4.213		
	Above (G2AC)			Average	20	3.4500	.60481		.000	
Morphological Derivation		Morphological Derivation	Below (G2BC)	Average	20	2.4500	.60481	Z= 4.583		
			Above (G2AC)	Average	20	3.8000	.61559		.000	
Figurative Language		Similes/ Metaphor	Below (G2BC)	Average	20	1.9750	.21134	Z=-5.446		
			Above (G2AC)	Average	20	3.9083	.26199		.000	
Semantics	14-15.11 Years	Contrastive Relation	Below Average (G3BC)	Average	20	2.7500	.44426	Z= 5.805		
			Above (G3AC)	Average	20	4.1500	.36635		.000	
		Multiple Meaning	Below (G3BC)	Average	20	2.5500	.51042	Z= 4.547		
			Above (G3AC)	Average	20	3.6500	.58714		.000	
		Associated Relation	Below (G3BC)	Average	20	2.6000	.50262	Z= 4.060		
			Above (G3AC)	Average	20	3.5500	.68633		.000	
		Convergent Naming	Below (G3BC)	Average	20	2.4500	.51042	Z= 5.035		
			Above (G3AC)	Average	20	3.9000	.64072		.000	
		Double Words Function	Below (G3BC)	Average	20	2.6000	.50262	Z = 4.922		
			Above (G3AC)	Average	20	3.8000	.52315		.000	
		Analogical Reasoning		Analogical Reasoning	Below (G3BC)	Average	20	2.6000	.59824	Z= 4.706
										.000

			Above (G3AC)	Average20	3.7500	.44426		
		Compare/ Contrast	Below (G3BC)	Average20	2.5000	.60698	Z= 4.210	.000
			Above (G3AC)	Average20	3.5000	.51299		
Morphological Derivation		Morphological Derivation	Below (G3BC)	Average20	2.4500	.60481	Z= 4.769	.000
			Above (G3AC)	Average20	3.7000	.47016		
Figurative Language		Similes/ Metaphor	Below (G3BC)	Average20	2.5750	.53112	Z=-5.102	.000
			Above (G3AC)	Average20	4.2417	.88270		

The Mann-Whitney (Z) test was done to check the significant difference across all age ranges and there observed a significant difference between below-average and above-average students' performance across all the domains in all three age groups.

The statistical test result reveals a highly significant difference between above-average groups (G1AC, G2AC, G3AC) and below-average groups (G1BC, G2BC, G3BC) across all test domains.

DISCUSSION

In every domain, the above-average students outperformed the below-average students. The results indicate that there is a positive relationship between language proficiency and academic achievement. Consequently, communication and language skills have a significant impact on a student's academic success. A study conducted by Einarsdottir et al. (2016) looked at the relationship between language proficiency at age 5 and later academic achievement throughout compulsory school in Iceland and revealed that oral comprehension abilities turn out to be a good indicator of future academic success. Success in academic areas throughout the school years is greatly influenced by establishing a solid language foundation early on (Pace, Hirsh-Pasek, & Golinkoff, 2016) and maintaining a focus on language skills even during the decoding years to support later reading success (Dickinson et al., 2010; Harris, Golinkoff, & Hirsh-Pasek, 2011). A study conducted by Chow et al. (2021) compared the language performance of children with and without mathematical difficulties. They compared

child vocabulary, morphology, and syntax between first- and second-grade children. Results revealed that largest difference between children with and without mathematical difficulty was in syntax. Children with mathematical difficulty exhibited poorer language skills than their peers, which showed the importance of linking syntax with mathematics learning.

Implication of the Study:

The present study emphasizes the influence of language abilities in the general academic performance of adolescents.

It emphasizes the importance of cognitive linguistic strategies in school curriculum right from primary classes for stronger foundations in dealing with language tasks involving higher thinking processes.

The present study's findings highlight the importance of school-based SLP in improving students' overall academic performance.

CONCLUSION

Results indicate that the student's general academic performance can be influenced greatly by their language proficiency. In this context, a Speech-Language Pathologist (SLP) can identify and help students improve their language abilities that might otherwise be impacting the student's academic performance at any grade level. A structured collaboration between the SLP, parents, and teacher is an ideal way to improve the linguistic ability of adolescents which in turn enhances their academic achievement.

Declaration by Authors

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