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Short communication

Language Application to Study Hard and Soft Sciences at School: Applied Linguistics Perspective

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Abstract

The role of language at school is paramount. It is like a blood pipe in human anatomy. Applied linguistics as a sub-discipline of linguistics, highly gives an emphasis to language application in the education system. In this regard, language application and implementation in the target research community were addressed in detail. Based on the nature of the research, it is possible to conclude that, the research is baseline research and that others can use the result of the research as a cornerstone for further study in their future career. The objective of this study is to assess language usage, function, and implementation at the targeted school on the one hand. To depict the status of language at school from applied linguistics perspective on the other hand. The researcher used an explanatory research design. To answer how language application is going in the case of the target group and why the application faces challenges in the existing phenomenon. Focus group discussion, document analysis, and interviews were the data collection tools used in this study. To mention some of the findings, when the learner fails to construct the letter correctly, the teacher treats him/her as if he/she does correctly. In addition, some learners have no strong relationship with their family or guardian. In contrast, very few of them have strong relationships with their family or guardians. Teachers are very willing to support their learners. However, the capacity of the learner, cooperation of the school community, and teaching aid are among the bottlenecks to enhancing the learning and teaching process. Applied linguistics as a sub-discipline of linguistics can play a pivotal role in language application to study hard and soft sciences at school. Thus, attention ought to be given to this discipline like maths.

Keywords: Applied Linguistics, Language Application, Hard sciences, Soft sciences

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1. INTRODUCTION

Language is a means to share wisdom and thought. According to Nath (2010), language is the vehicle of discretion, means the peculiar mode to transfer, transmit the intended message to the receiver. Everyone as human beings make utilizes it. Language is a purely human and non-instinctive method of communicating ideas, emotions, and desire by means of systems of voluntary produced symbols

Applied linguistics is a particular field of linguistic exploration that not only studies linguistics in a theoretical manner, but also examines how language has an actual impact on society and on people's lives. This type of study can be conducted and utilized in a number of different ways, and may overlap with research in some related fields such as sociology, psychology, communications, and multicultural studies. Applied linguistics examines human language, or languages, and applies the understanding of human thought and behavior gained through such examination to real world problems and applications that can be utilized in different ways[1].

According to linguistic society of America, The term 'applied linguistics' refers to a broad range of activities, which involve solving some language-related problem or addressing some language-related concern. It appears as though applied linguistics, at least in North America, was first officially recognized as an independent course at the University of Michigan in 1946. In those early days, the term was used both in the United States and in Great Britain to refer to applying a so-called 'scientific approach' to teaching foreign languages, including English for nonnative speakers. Early work to improve the quality of foreign language teaching by Professors Charles Fries (University of Michigan) and Robert Lado (University of Michigan, then Georgetown University) helped to bring definition to the field as did the 1948 publication of a new journal, *Language Learning: A Quarterly Journal of Applied Linguistics.* [2]

In addition, during the late 1950s and the early 1960s, the use of the term was gradually broadened to include what was then referred to as 'automatic translation'. In 1964 following two years of preparatory work financed by the Council of Europe, the Association Internationale de Linguistique Appliquée (the International Association of Applied Linguistics usually referred to by the French acronym AILA) was founded and its first

[1] https://www.languagehumanities.org/what-is-applied-linguistics.htm
[2] https://www.linguisticsociety.org/resource/applied-linguistics

international congress was held in Nancy, France. Papers for the congress were solicited in two distinct strands—foreign language teaching and automatic translation.[3]

The importance of the role of language in the leaning process cannot be overestimated. Language plays a key role in unifying a vast and complex notion and in providing individuals with outlets for developing diverse skills and abilities. Language is one attribute that sets humans apart from all other creatures and binds humans together across all geographic barriers. A word can cause to sink into the deepest despair or lift us to inspired action. Language can be the tool for great achievement in any discipline. Good understanding of the capabilities and needs of the individual child and a sound knowledge and belief in the goals of language acts programme are vital factors in successful individualisation of instruction (ibid).

The learners' lack of English language skills inhibits both their understanding and expression (Roseberry-McKibbin & Brice, 2000; Sarinjeive, 1999). This results in poor academic achievement and learners not meeting national standards, from Grade One throughout all the important academic transitional phases, namely the Foundation, Intermediate and Senior Phases, up to Grade Twelve (Plüddemann, *et al*., 2004). The learners' poor proficiency in English is generally viewed as one of the contributing factors to the current unsatisfactory matriculation results of South Africa's Black learners (Bosman, 2000).

Policy implementation and related issue resulted to violation of the policy in Ghana. Studies of practices in Ghana also uncovered examples of schools instituting practices that were in absolute violation of the policy, such as prohibiting the use of local languages in classrooms and in the school compound, even during play or break time (Ansah and Agyeman 2015); instituting various forms of punishment to students for not speaking English (Plüddemann *et al*., 2004); or holding back students in early years due to low levels of English (Plessis, 2006).

Globally the main objective of education in any society is to provide the learner a quality education that enables him or her to become a competent, effective, literate, productive member of the society. This become real when fertile ground is created at the lower grade levels. In this regard, language application to study hard and soft sciences at school from applied linguistics perspective was assessed thoroughly in this study. The desire to understand the scope and significance of applied linguistics as a subfield of linguistics that is directly put into practice at elementary educational levels served as a key motivation for the

[3] https://www.linguisticsociety.org/resource/applied-linguistics

researcher. Another factor that inspired the choice of a title was to promote an understanding of how language is utilized in school settings, encompassing both the structure and function of language in the context of teaching and learning various subjects, including the natural and social sciences.

So many researches have so far been done on the language in education, and language acquisition (Mazrui, 1998; Freire, 1968). However, nothing had been done on language application to study hard and soft sciences at school from Applied Linguistics Perspective. Thus, this study can be considered as a baseline research. Therefore, other researchers can use this study as a cornerstone for further investigation.

The objectives of this study are (1) to assess the language usage, function, and implementation at school on the target study area; and (2) to depict the status of language at school from applied linguistics perspective in the study target population.

2. MATERIAL AND METHODS

The researcher used explanatory research design. To answer how language application is going on the case of the target group and why the application face challenge in the existing phenomenon.

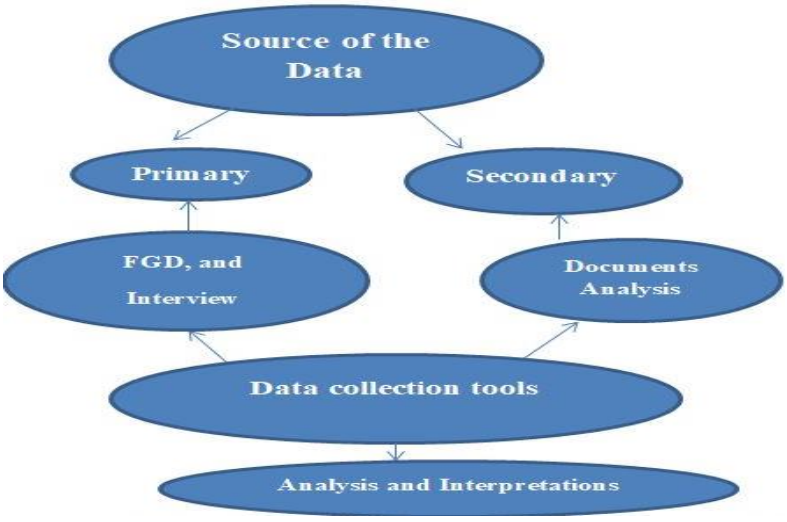


Figure 1. Research methodology

2.1.Data collection tools

To come up with these findings, the researcher used three tools to collect the data from the informants. These are documents analysis, interview, and focus group discussion. The document analysis was utilized to collect the data from the learners' exercise book. The

researcher believed that, from the students' exercise book, possible to get the mistake committed by both learner and teacher easily. Interview was also conducted to collect the data from the teachers in detail. Focus group discussion was made to collect the feeling, opinion, and perception of the family. The collected data were analysed qualitatively.

3. RESULT AND DISCUSSION

3.1.The Data obtained from Document Analysis

The document analysis of this study was stick to the students' exercise book. The reason is from the exercise book possible to get the efficacy of the learner and the care teachers' give to learning and teaching system easily. With this sense, look at Figure 2.

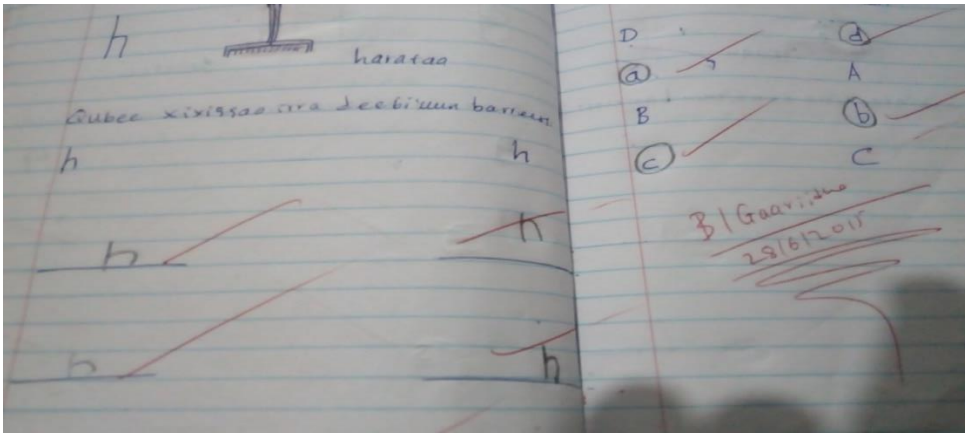


Figure 2. Rewrite and circled the small letters

The subject of the exercise book mentioned above was Afan Oromo, and it belonged to grade one students. According to the data, the students were instructed to re-write the letter 'h' in the target language, but the learner failed to do so. On the left column, the learner struggled to re-write the letter 'h' correctly. Surprisingly, the teacher treated them as if they were correct. In this case, based on the provided data, the learner was incorrect, and the teacher failed to correct them, instead choosing to treat them as if they were correct.

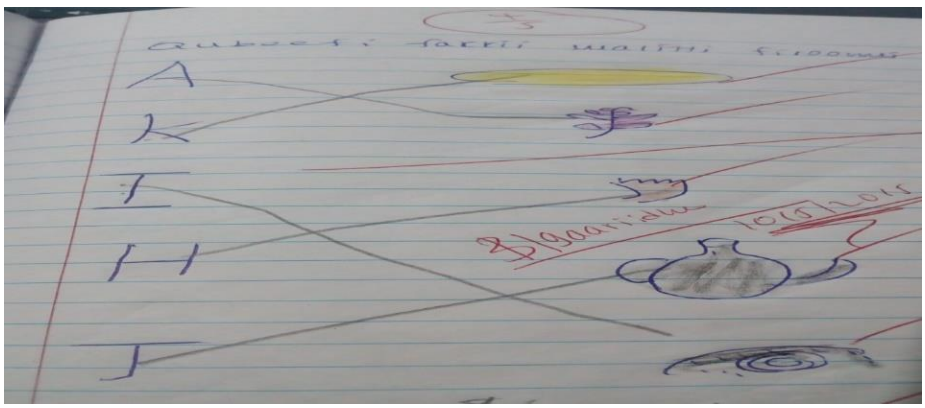


Figure 3. The initial letter the word with the symbol (matching the initial letter with the symbol it represents)

In Figure 3, the learner was asked to match the initial letter the word revealed with the object found on the right column. The demonstration and presentation by the learner was right. The data was from grade one student and the subject was Afan Oromo in the target population. Thus, Grade one students in the target population were instructed to associate the initial letters of words with corresponding objects in the right column, and the learners successfully demonstrated the correct matching.

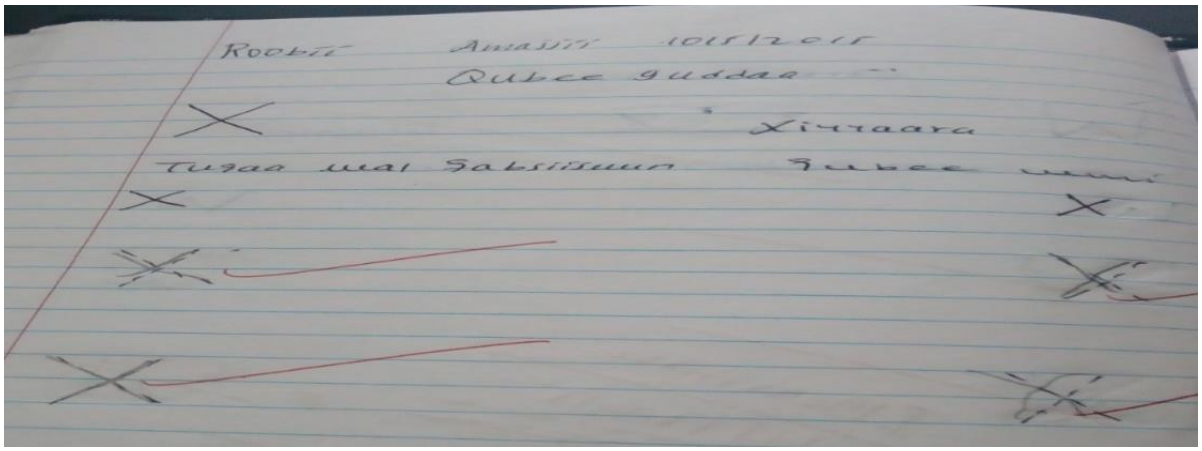


Figure 4. Rewrite the letters following the dots

In the provided image (Figure 4), the student was instructed to connect the dots along the lines to create the letter 'x,' with the teacher offering guidance for its construction. Regrettably, the student did not successfully form the letter 'x' in either the left or right columns, and surprisingly, the teacher acknowledged their attempt as if it were correct.

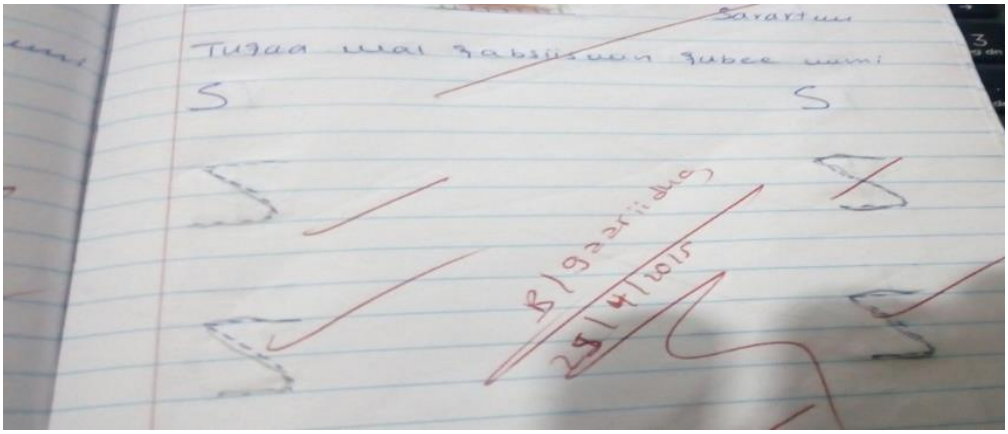


Figure 5. Rewrite the letters following the dots

The learner was instructed to follow the line provided and connect the dots to create the letter 's' (Figure 5). On the right column of the second line, the learner did not construct the letter correctly. The teacher regarded them as if they were correct. Furthermore, in the second line from the left column, the learner struggled to write the letter 's' correctly. Once again, the teacher treated them as if they were right. This could be viewed as a detriment to the generation.

Thus, the pupil was directed to connect the dots and form the letter 's,' but they made errors in both the right and left columns, with the teacher mistakenly considering their attempts as correct, potentially having a negative impact on their education.

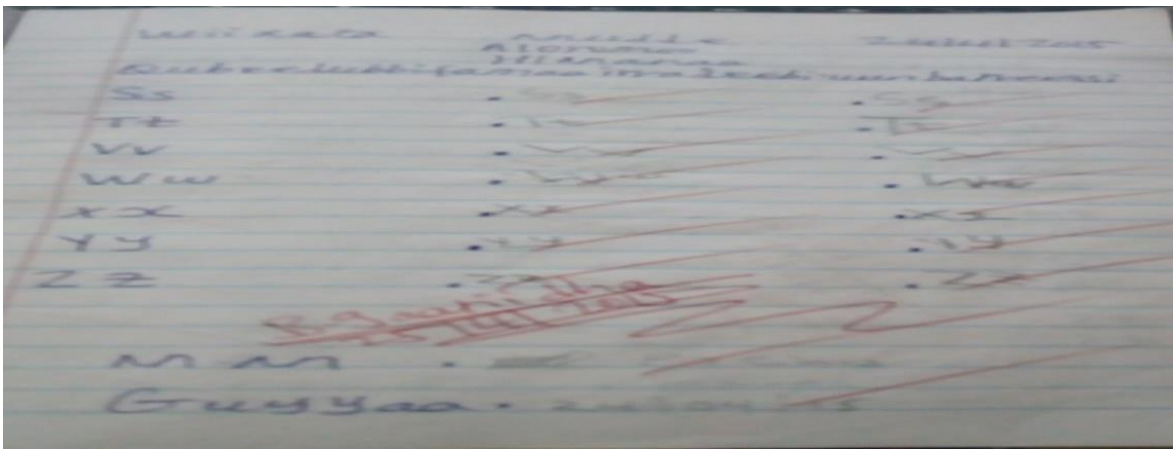


Figure 6. Rewrite the letters

Based on the data provided (Figure 6), the learner was instructed to write both capital and small letters alongside the given letters from the left column. However, the learner struggled to write the letters 'Ww,' 'Yy,' and 'Vv' correctly and was asked to make two attempts in the middle and right columns but still did not succeed. What's most concerning is that the learner was treated as if they were correct in their attempts.

Therefore, even if the learner was directed to write both capital and small letters next to the provided letters from the left column, but they encountered difficulty with 'Ww,' 'Yy,' and 'Vv,' making multiple unsuccessful attempts, and notably, they were erroneously regarded as correct.

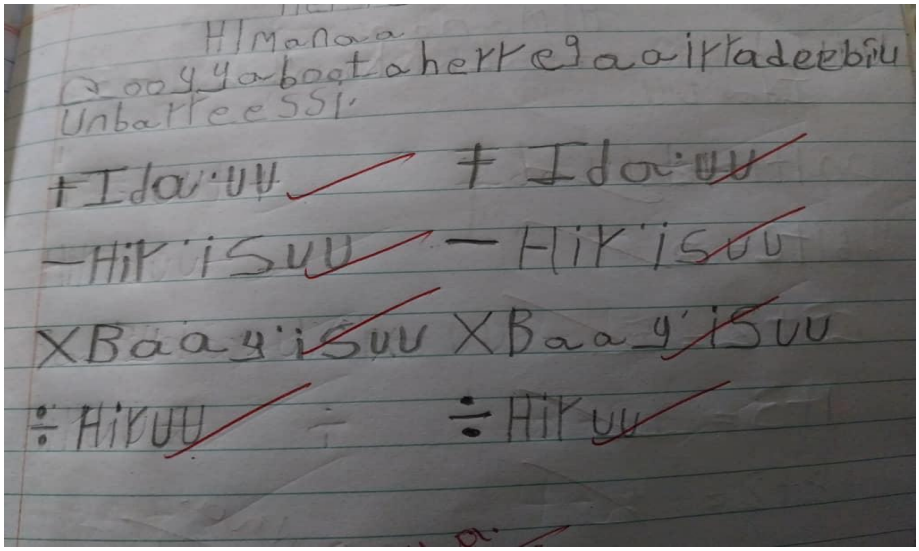


Figure 7. Tie mathematical signs with texts

The subject of the above exercise book is Mathematics (Figure 7). The pupil is practicing the basic arithmetic maths exercise. The above data shows that, the mathematical signs were tied with the equivalent texts. The sign + tied with the text plus. The sign x tied with the text multiplication. The data shows that, the pupil correctly matches the signs with the texts. The core principles of mathematics encompass the fundamental mathematical operations involving numbers, which consist of addition, subtraction, multiplication, and division. Arithmetic, being a crucial branch of mathematics, serves as the cornerstone of the broader field of mathematics and plays a significant role in the education of students.

This shows that, the student practicing basic arithmetic exercises where mathematical symbols like '+' is correctly matched with their corresponding texts, illustrating the foundational nature of arithmetic in mathematics education.

Figure 8 shows that, Arabic numerals are tied with the texts in Afan Oromo. The Arabic numeral 6 is tied to the text six (*ja'a*), 7 is tied to the text seven (*torba*), 8 is tied to the text eight (*saddeet*), 9 is tied to the text nine (*sagal*), and 10 is tied to the text ten (*kudhan*). The data shows that, the pupil correctly matches the Arabi numerals with the texts in the target language. This shows that, vernacular language prompted the pupils to learn basic arithmetic mathematical exercise very easily.

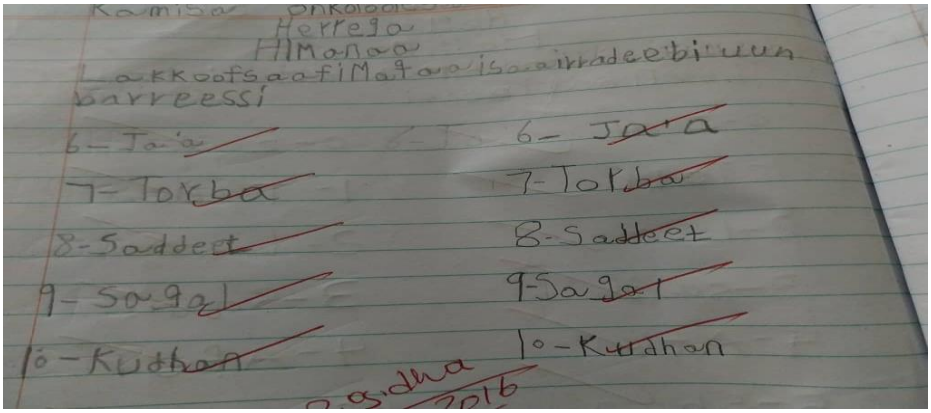


Figure 8. Tie Arabic numerals with the texts

3.2.The data obtained from Focus Group Discussions (FGD)

In this section, FGD 1 and FGD 2 stand for focus groups one, and two, respectively. Because the data had reached a point of saturation, the researcher decided to present results from two focus group discussions. Consequently, the researcher addressed the topic of families maintaining continuous follow-up on their children's learning progress at home.

FGD 1

According to focus group discussant one, at the family level we are very busy with the family's private business. We usually, go to the workplace early in the morning before 7 o'clock. We spent the whole day there. Usually, the guardian takes our children to school. They usually have a strong relationship with the guardian. Honestly speaking, we do not have such a relationship with our children as expected from us. Most of the time I and my wife go back home at midnight. Which means after our children sleep they go to bed? You know this ought to be improved. We have to work on that. After this, I have to pay attention to my children. My children are my special business. The other person from the group discussant starts his speech by saying in the local language. Children are a special and unique gift from God. They required attention. We must give time to our children after school at home. Home is also another school. I personally spent more than two hours with my children at home every evening. In case I am not around, my wife takes the position and helps our children at home. Here let me tell you one story. My elder child asked me one question saying, today our teacher taught us saying earth is a circle like an egg. The shape of the earth is similar to that of an egg or ball. He continues is that right Father? I said yes. The shape of the earth is similar to that of the egg. You know some years before it is believed that the shape of the earth is similar to that of a plate. It is considered as a plane shape. Then a scientist called

Copernicus discovered that the shape of the earth is similar to that of an egg shape. My child stopped me here is my question, like you and my teacher say if the shape of the earth is similar to an egg why the water found in the earth are not pored or drooped out. I became confused. By then I was surprised with the question. Honestly speaking I do not know the answer. For that moment I say I will answer this question by tomorrow. Now let's focus on other subjects. That day I tried to Google to get the answer. But I couldn't get the answer. In the morning, I give a call to my friend who is teaching Geography at university. He says this is because of gravity. He thought me in detail. Frankly speaking, everything was new to me. I did not have any information about it before. You see guys sometimes children might ask you a question that only scientists can answer. This came to exist because of the time I gave to my children at home. Then I kept my promise and told him everything I got from the university professor. The third group discussant says, I also fever the idea of the second speaker. However, things are very tough. The living expense is increasing from time to time. I am a daily laborer. I earn my salary based on my daily job performance. Thus, I want to upgrade myself. I want to be a permanent worker in my organization. Therefore, I need to improve myself every day to satisfy my organization. To do so must spend more time at working workplace. I do not have time to help my children. Even they go to school without the help of anyone by themselves. I take of them lonely. Their mother died some years before. Sometimes I forgot to cook their brunch and lunch. Then I was forced to buy from the supermarket. You know the living style matters. You know [drop of tear from his eyes] I love them. I need to feed them. If I spot, my work everything ends. I must give time to my work if so, no food no cloth, and no shelter. To survive, I have to spend most of my time at the workplace. The other two members repeat almost the same thing. One group member prefers silence.

In the first part of the discussion, the first participant highlighted how busy their family is with private business, often leaving home early in the morning and returning late at night, leading to a limited relationship with their children. They acknowledged the need for improvement in this area and expressed a commitment to pay more attention to their children.

The second discussant emphasized the importance of giving time and attention to children, sharing a story about their child's question regarding the shape of the Earth and their pursuit of answers, which emerged from spending quality time with their child at home.

The third participant acknowledged the value of the second speaker's perspective but pointed out the challenges they face as a daily laborer, striving to become a permanent worker. Their

difficult work schedule makes it challenging to be present for their children, especially since they are the sole caregiver due to their spouse's passing. They shared their struggles to balance work and family responsibilities, sometimes resorting to buying food instead of preparing it at home. The final two participants in the group expressed similar sentiments, while one member remained silent.

FGD 2

I occasionally help my children at home. I know my children are clever students. The elder one study pilot and currently he is serving at Bole International Airport as a lead pilot. The younger (younger of the pilot) is a senior physicist at a prestigious university. Currently he is a professor of physics. The third one is the head of customs and revenue in Addis Ababa. The fourth and the fifth are students here in this school. Both of them are clever like their elder brothers. They score highest every year and are awarded by the school. I do not want to kill my time. Why should I disturb them? They know how to study, read, and get ready for the exam. I myself was clever when I was a primary and secondary student. Astonishingly, I stopped my education in grade 11 and I got married. You know I regret it. I ought to finish at least my secondary school. The other focus group discussant says, in a dynamic world we need to help our children at home. Every other day I help them at home. The remaining days are for my wife. She was usually eager to help our children at home. Even I am not good at using different techniques to help our children at home. My wife is by far better than me in this regard. She has been a teacher for the last 15 years at primary school. She knows how to teach and help children at home. In fact, it is her profession. The good thing is that our children are among the very few who got a passing mark on the grade 12 national exam last year. Both of them scored high grades and were awarded nationally. They are identical twin. This year they are first-year university students. The other twins are primary students here at a school they are doing the same thing that their elder brother did. You know as I say the teaching material is changing from time to time. The environment also plays a role in changing the learning and teaching system. Thus, we keep on helping every day. I think the group members of this group discussants can learn from each other. The other group discussant said that we are very eager to help our child but we do not know how to help them. I do not know how to read books in Afan Oromo. My child requested me to help them but I do not know how to read. My wife is also unable to read at all. I employed a teacher at home. When his teacher (home teacher) is absent due to personal problems, I sometimes request

help from our neighborhood. The idea of the other two members of the focus group discussion is similar.

In response, the discussant stressed the importance of helping children at home in a rapidly changing world, with the speaker's wife being an experienced teacher who takes the lead in assisting their children. This has resulted in their children's remarkable success, as they scored high on the grade 12 national exam and are now first-year university students. The twins among them are following a similar path, and the family recognizes the evolving nature of teaching and learning, making continuous support essential. The group members can learn from each other's experiences.

The second group discussant expressed eagerness to help their child but struggled due to not knowing how to read Afan Oromo. They employed a home teacher and occasionally sought assistance from neighbors when the teacher was unavailable. The other group members shared similar challenges in helping their children.

3.3.The Data obtained from Interviewee

In this part, the researcher obtained data from the teachers on their experience and expertise view on the learning and teaching process in the target study population. In this part I1 is representing interviewee one, I2 representing interviewee two, and I3 representing interviewee three.

According to I1 (Interviewee 1), most children are very eager to learn from their teacher and each other. They are keen to give special emphasis to what their teachers are saying. At this stage, they are very willing to cooperate with the teacher and their peers in the class. The major problems with the students are, on the first glance their background is varying. Some of the students are outstanding. They know dos and do not dos. They know what is expected from them. They finished their homework at home with the help of their family. Very few of them are students with poor background. These students are dependent. They are depending on their teachers or peers. They do not want to do their homework. They are not actively participating in the class. They sleep in the class. They show mal behaviour. They are not happy whatever issues are raised in the class. I personally focus on those students to help them and make them better students. In a year and two years' time, I make better some of the students with this behaviour. I remember that, I make some students to be independent in their learning. All those came to exist after I talk to the family. We have discussed with the family on the issues to be improved with the help of school board and I managed the problem to some extent. In my teaching experience, I faced so many problems in relation to the

competency of the students at their grade levels. Some of the students cannot utter a single word at the stage to make discourse and dialogue with their classmate. What do you do? You know it is very tough. Unless you managed things wisely by discussing with stakeholder. This is very important.

Thus, According to Interviewee 1, most students are enthusiastic about learning, particularly when it comes to their teachers and peers. However, the major issue lies in the diverse backgrounds of the students, with some being well-prepared and actively engaged, while others from disadvantaged backgrounds struggle with dependency on their teachers and peers, leading to poor participation and behavioral issues. The teacher personally focuses on helping and improving these students, and through discussions with their families and school board, they have successfully facilitated positive changes in some students' behavior and independence in learning, demonstrating the importance of effective stakeholder communication in addressing such challenges in teaching.

According to I2 (interviewee 2), you know things are intermingled. I usually talk to the school principal to deliver us all the necessary teaching aids. Producing quality generation requires resources. Not only are those, but the commitment of the family to help their children is very important. Above all the commitment of the students is also paramount. They must show an interest in changing themselves. The problem is they want to pass from one grade to another. However, they are not willing to show an interest in responding to the arithmetic questions I raised for them. That is why I said to you things are intermingled. How on earth? How you pass from one grade to another with this efficiency. When I say this very few of them are very active. These students might have a good background. Their family might be educated. Sometimes, there might be gifted and skilled students. Above all, there must be sufficient teaching aids to help learners and make better the learning system. The number of the students expected from us to promote is clearly stated by the school principals. About ninety-nine out of a hundred is expected from us to promote the learner to the next grade.

According to Interviewee 2, the effectiveness of the education system is intertwined with several factors, including the availability of teaching aids, family commitment to their children's education, and the students' willingness to engage and show interest in learning. They noted that while some students excel and have a strong family background, many students are not actively participating and are primarily focused on moving to the next grade. Ultimately, the success of promoting students to the next grade largely depends on these combined factors.

According to I3 (interviewee 3), school is a place where students gain knowledge and skills. However, in our case, I do not see that. The families are sending their children to school to just for the sake of sending. I am sure they never ask their children what they learn after school. School is the stage of excellence. A place where students exercise how to gain and hunt for knowledge and wisdom. It is not something created haphazardly. You know we need to tell all the stakeholders to facilitate their part in the creation of better teaching and learning zones. For me, this is not something we leave for teachers or family only. It requires a shared role. The government can play its role. The education professionals can also play their role. As I say, some students have no exercise book. They came to school without an exercise book. When I ask them why, some of them reply they are poor. They do not have money to buy. Some of them do not utter a single word. Just keep quiet. Sometimes you might be shocked when you see such students. Even I cursed myself why I became a teacher. As you know, teaching is the father of all professions. We need to cultivate like seedlings. The reason is that, on the one hand, the concern is all about producing an effective generation. On the other hand, it is focusing on paving the way for the next generation to create a better Ethiopia. This is about the keeping generation. If things go off target, things become the opposite.

Thus, the purpose of a school should be to facilitate knowledge and skill acquisition, but in their experience, it seems that many families send their children to school without actively engaging in their education or asking about their learning progress. They emphasize the need for all stakeholders, including the government and education professionals, to collectively contribute to creating a better educational environment, noting that some students face challenges like not having exercise books due to financial difficulties. Interviewee 3 emphasizes the critical importance of nurturing the next generation for the betterment of Ethiopia, underscoring the potential consequences if this goal is not achieved.

4. Conclusion and Recommendations

In conclusion, applied linguistics is a sub-discipline of linguistics that emphasizes the applicability of language in the learning and teaching arena. The study reveals that families should give attention to their children to enhance education and create a better generation. Children develop their language capacity at an early age, and families and teachers should practice positive reinforcement to help them master basic vocabulary and concepts. Language application is not limited to language courses but is also applied in both hard and soft sciences at any level of education. Proper application of language in school or applied

linguistics will have a complementary effect on the learner's cognitive and social development. Thus, families should take care of their children both at preschool and at home to create a cornerstone in the knowledge and skill development of their children.

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