Learning Science Through The Mother's Tongue In Ethiopian Primary School: Its Scientific Benefits And Challenges

Dr. Teshome Gudissa Degu

Dilla University, Ethiopia.

Abstract

The language of instruction plays a crucial role in the educational development of students and is vital for the realization of communication and understanding between teachers and students. The purpose of this study was to understand teachers' and students' views about the benefits and challenges of learning Science through the mother's tongue in primary schools in Ethiopia. The study was guided by the positivist paradigm. With regards to research design, a cross-sectional survey design was used. 105 teachers and 80 students were taken for the study using simple random sampling techniques. Data collected through questionnaires were organized and analyzed using both descriptive and inferential statistics. Accordingly, mean, standard deviation and independent sample T-test were used to analyze data. The finding of the study revealed the following benefits when students learn using their mother tongue: do better in science subject exams, confidence when allowed to ask questions, easily learn science concepts, easily understand and develop practical skills, better understand experiments and experimental procedures and learn technical words in science better. The study also identified the following challenges related to using mother tonnage in science classes: lack of sufficient science textbooks, negative attitude towards mother tongue among practitioners, lack of training for teachers on how to use mother tongue as a medium of instruction, and teachers' preferences for English/Amharic to mother tongue. Based on the findings, the recommendation is that teachers and educators need to examine their practices and develop ways to authentically engage and legitimize the use of mother tongue language for science teaching in Ethiopian primary schools.

Keywords: Science, Mother tongue Education.

Introduction

Education, whether formal, informal, or nonformal, is directed and purposeful learning that aims to reconcile behavior with cultural elements (Pajares, 1992). Obanya (2004) also links education with the intergenerational transfer of a society's cultural heritage, and the mother tongue is the means for such transmission. If the school does not support learning through the mother tongue, students can become isolated from their culture and education can become countercultural, since education cannot be separated from culture. The important role of language is indisputable. It is a reasonable conclusion to say that the success of any educational process depends largely on the language to be used since it is crucial to the transmission of knowledge (Markos Mathious and Abraham Kebede, 2020).

The language of instruction plays a crucial role in the educational development of students and is vital for the realization of communication and understanding between teachers and students (Ejieh, 2004). To improve the quality of education, language policy must consider learning the mother tongue. Any Education type that ignores the mother tongue in the early years can be less productive, unsuccessful, and negatively affect children's teaching (Nishanthi, 2020).

The use of the child's first language in school has many international been promoted by organizations such as the United Nations Educational, Scientific and Cultural Organization since 1953 (UNESCO, 1953); however, the norm favoring monolinguals in education persists in Africa. Many corner-to-corner children, especially in the developing world, learn very little in school, a truth that can be linked to teaching in a language they do not fully understand. It is a practice that leads to insufficient learning and acquisition of knowledge and skills, which leads to problems like student failure and repetition rates.

UNESCO (1953) considers the mother tongue as a tool that everyone relies on to learn and express themselves. It is also the basis of thought (Díaz&Pérez, 2015). Since one of the basic principles of education is that learning should move from the known to the unknown, the student's prior knowledge is best expressed through the language with which he is most familiar. Cook (2001) found that, according to some studies on cognitive processing, even advanced second language learners are less efficient at absorbing information from the second language L2 than from the first language (L1). This means that the mother tongue remains relevant even after learning a second language.

Science at the school level is largely considered a practical subject that is taught, for example, on an experimental basis. But, effective teaching and learning require language, either written in textbooks or shared orally in classroom discussions (Oyoo, 2015). Language is also necessary during practical work: teachers have to explain what they are doing and students have to ask questions (Millar, 2004). Research involving a wide range of educators in various countries has consistently shown that language plays a crucial role in the formation and development of terms. This suggests that a teacher's and student's language is fundamental to teaching science and creating the conditions for meaningful learning (Oyoo, 2015).

Statement of the Problem

Taking students' cultural backgrounds into account when planning and teaching science has influenced many recent discussions to make teaching more student-centered. In many countries, formal education remains euro centric and academic and reflects more Western academic cultures than the cultures of students and teachers (Abah, Mashebe&Denuga, 2015). This phenomenon is a major problem in developing countries, where formal education does not take into account how most students communicate, think, and learn.

Poor student performance in school has been attributed to "cultural gaps" between what the school curriculum should expect from the school curriculum and the environment in which students are socialized (Jabah, Maschebe, Denuga, 2015). The reputation for poor science performance in elementary school students is an issue that needs to be addressed because teaching and learning effectively depend on the language of communication (Avbenagha, Montag, Akpojisher, 2014).

It is well known that the mother tongue is the best medium to teach a child. For Ethiopia, a multilingual, multiethnic, and culturally pluralistic country, implementing education in the mother tongue is not a problem-free endeavor (Hirut WoldeMariam, 2008). Ethiopia is a country with a rich and diverse ethnic/linguistic makeup with 85 actively spoken languages. However, one language (Amharic) remained the national language and medium of instruction for much of the country's history. It was not until1974, when the socialist government took power, that the use of other ethnic languages for didactic purposes was emphasized.

After the change of government in 1991, Ethiopia's education system is in a state of upheaval. According to the federal principle, a centralized administration has been replaced by a decentralized one. The Federal Ministry of Education, which was heavily centralized in the past, is now decentralized in many federal states, district offices, and departments that are demarcated along ethnic lines. In addition to the decentralization of competencies, the decentralization process has brought various initiatives of change, among them the change in the language of education (Alemu, Abebayehu, Tekleselassie, 2015). Since 1994, mother tonguebased education has been implemented especially at the primary level to improve literacy rate and academic success. as well as increase appreciation of local languages and cultures (Wolff, 2011). More than 30 languages are used as the language of instruction or as a subject in primary schools (Derash, 2013). Several of these languages are used in the training of primary school teachers (Anteneh and Ado, 2006). Ethiopia's 1994 education and training policy states that "primary education is taught in mother tongue languages" (FDRE, 1994: p. 23). The underlying assumption of the guideline (as stated in the guideline document) is that the language of learning is the "mother tongue" of all children living in the area where the language of the respective nationality is spoken.

Concerning this change, there are many debates in the country. Some Ethiopian scholars argue that the use of many mother tongue languages for instruction is vital for addressing issues related to a child's right to learn using the first language and to make learning more practical and real. Other suspects its academic and human right benefits and argues from a political point of view by saying that shifting from a language to many languages threatens the integrity of nations, nationalities, and people and create more division. As a researcher my position is clear. Though there are challenges, it is mandatory to use children's first language for teaching science subjects, especially in primary schools in Ethiopia because of its immense academic and scientific benefits. With this intention, therefore, the purpose of this study is to understand Teachers' and Students' Views about the benefits and challenges of Learning Science through the Mother's tongue in Ethiopian Primary School

Purpose of the Study

The purpose of this study was to understand teachers' and students' views about the benefits and challenges of Learning Science through Mother's tongue in Primary schools in Ethiopia

Research Objective

This study sought to achieve the following specific objectives;

- To find out teachers' and students' views about the benefits of Learning Science through Mother's tongue in Primary School of Ethiopia
- To find out teachers' and students' views about the challenges of Learning Science through Mother tongue in Primary schools of Ethiopia.

Research Design and methodology

The researcher has chosen to conduct this research in government primary schools found in the Arsi zone located in the central part of the Oromia Region, Ethiopia. It is located in the middle of Oromia, connecting the western regions to the eastern ones.

The study was guided by the positivist paradigm which allows the researchers to understand the issue. With regards to research design, a crosssectional survey design was used for its appropriateness to study the research problem comprehensively by collecting data to reach a complete understanding of the problem, sound results, and valid conclusions.

The target populations of this study are two main groups (Teachers and students). 105 teachers and 80 students were taken for the study using simple random sampling techniques.

The study from which this article emanated used a Questionnaire as a data collection tool. The questionnaire was used to elicit data from teachers and students.

Quantitative data collected through questionnaires were organized and analyzed through both descriptive and inferential statistics using SPSS version 20. Accordingly, mean, standard deviation, and independent sample Ttest were used to analyze quantitative data.

In this research, ethical issues were considered in the following ways:

Firstly, the researcher took the position that whatever the participants told him was true for it

is their reality. The researcher never allowed his experience and philosophy to influence him to question some experiences of the participants. The researcher did this consistently throughout the study. Secondly, the researcher informed participants about the overall purpose of the research and its main features, as well as the risks and benefits of participation in the study. Thirdly, the researcher took full responsibility for the participants, including issues such as ensuring confidentiality and avoiding harmful practices that affect the participants. In ensuring confidentiality, the researcher did not reveal the private data and identities of the participants. The researcher never mentioned their names and their addresses.

Data Presentation, Analysis, and Discussion

Response Rate of the Quantitative Data

In this study, a total of 197 respondents were selected and invited to complete the questionnaires. Of these numbers, 115 teachers and 82 students' representatives. Out of the 115 questionnaires distributed to the teachers, 105(91.3%) were returned and filled correctly and the rest 10(8.7%) teachers' questionnaires were rejected because their responses were incomplete. While questionnaires were distributed to the students 80(97.6%) were returned and filled correctly and the rest 2(3.4%)students' questionnaires were rejected, because their responses were incomplete, thereby generating a return rate of 94.9 percent. Babbie (1998) suggests that a 50% response rate is adequate, a 60% response is considered good while a 70% response rate is considered very well.

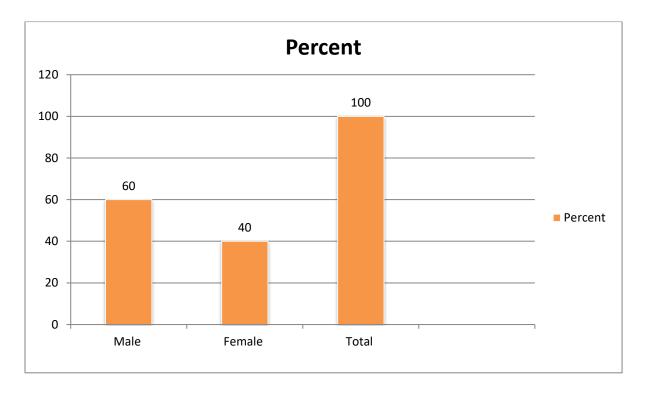


Fig 1: Sex of Respondents

As can be seen from item one in Figure 1, the sex distribution of teachers, 60 % of them were males, and 40 % were females. This

indicates that the majority of the respondents in the selected primary schools were males. From this, one can recognize that the number of females in the teaching profession is smaller than males in the study area.

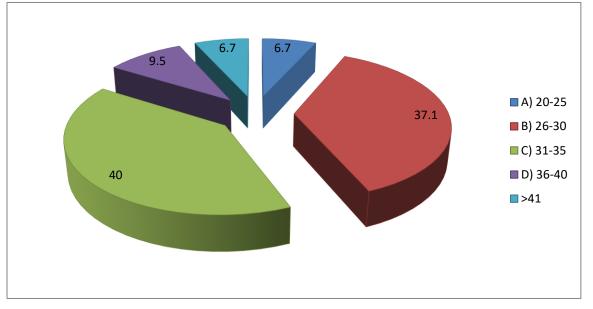


Fig 2. Age of the Teacher Respondents

Looking at age structure, 6.7 % of teachers were in the age category of 20-25 years, 37.1 %

of teachers were between 26-30 years old; 9.5 % of teachers were in between 36-40 years and only 6.7 % of teachers were above 41 years old.

40 % were in between 31-35 years of age. The above data showed that the majority of respondents were inactive working age group.

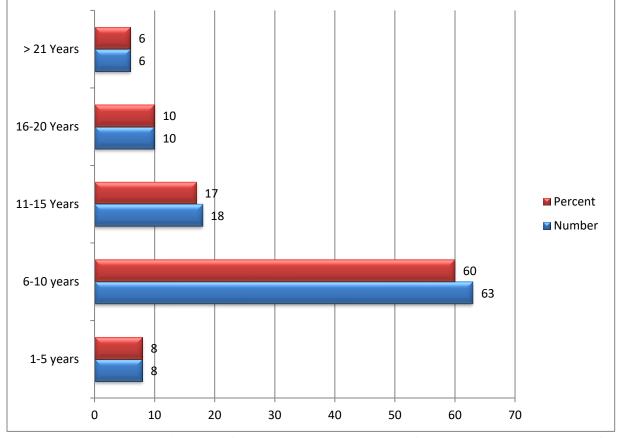


Fig 3. Teaching Experiences of Teacher Respondents

As it can be seen in the above graph, 8(8%) of teachers had 1-5 years of work experience, 63(60%) of teachers had 6-10 years of work experience,

18(17%) of them had 11-15 years of work experience and 10(10%) of teachers had work experience of 16-20 years. The remaining 6(6%)teachers had work experience of greater than 21 years of experience.

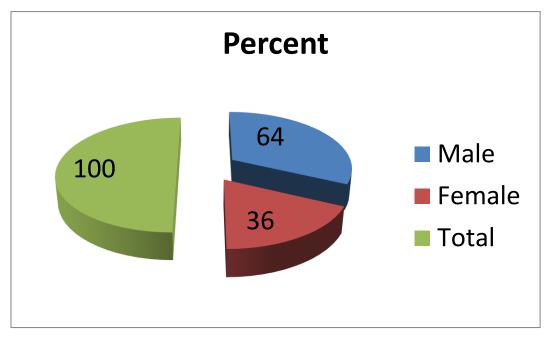


Fig 4. Sex of Students

As it can be observed in the above figure, out of 80 students, 64% of males and 36% were females.

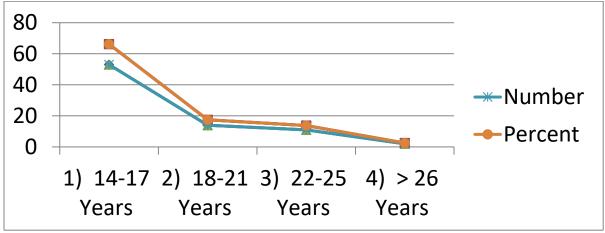


Fig 5. Age of students

The above figure indicates that 66.2% of the students were in between 15-18 years of age and 17.5% were in between 18-21 years. The remaining 13.7% of the students were in between 22-25 years of age.

SN	Items		Respondents Typ			t-value	p-value
		Teachers (N=105)		Students (N=80)			
		Mean	SD	Mean	SD		
1	Students who can read and write in their	4.24	1.15	3.73	1.51	-2.96	.013
	mother tongue easily learn science concepts						
2	Students do better in science subjects exams	3.39	1.08	3.56	1.24	-2.30	.022
	when they are taught in their mother tongue						
3	Students are more confident when allowed to	3.90	1.08	3.88	.945	5.60	.060
	ask questions in their mother tongue						
4	Using mother tongue for instruction enables	4.36	1.16	3.59	1.32	-1.46	.145
	students to interpret science information						
	obtained more adequately and correctly						
5	Teaching using in mother tongue allows	4.12	1.28	4.49	1.20	-1.61	.009
	students to develop practical skills easily						
6	Classroom participation is enhanced if	4.37	1.38	3.91	1.36	-1.91	.047
	students are allowed to use their mother						
	tongue						
7	Students better understand experiments and	4.22	1.20	4.12	1.15	.454	.651
	experimental procedures when they are taught						
	using their mother tongue						
8	Mother tongue makes science learning	4.45	1.60	3.57	1.26	-4.14	.060
	effective whether it is written in textbooks or						
	shared orally during the discussion						
9	Students learn technical and nontechnical	3.90	1.23	4.04	1.03	722	.472
	words in science better when taught in their						
	mother tongue than in English						
10	All learning follows through smoothly once	3.55	1.19	3.90	1.04	3.19	.062
	learners have attained some proficiency in						
	their mother tongue						

Table 1: Response of Respondents on the use of Mother Tongue in Science Teaching

As can be seen in Table 1 item 1, the calculated high mean value of teachers (M=4.24, SD=1.15) and students (M=3.73, SD=1.51) indicated that students who can read and write in their mother tongue easily learn science concepts. On the other

hand, the calculated t-test value (t=0.013, p<0.05) showed that there is no statistically significant difference between the two respondents on the issue since the P-value of 0.013 is greater than the alpha (α) level of 0.05.

Table 1 item 2, the calculated mean of teachers (M=3.39, SD=1.08) and students (M=3.56, SD=1.24) also revealed that students do better in science subjects exams when they are taught in their mother tongue. On the other hand, the calculated t-test value (t=-2.30, p<0.05) showed that there is no statistically significant difference between teachers and students as the P-value of 0.060 is greater than the alpha (α) level of 0.05.

Further, it can be observed from the same Table of item 3, the calculated mean of teachers (M=3.90, SD=1.08) and students (M=3.88, SD=.945) showed that students were more confident when allowed to ask questions in their mother tongue. In this regard, similarly, the calculated t-test value (t=5.60, p<0.05) showed that there is a statistically significant difference between teachers and students on the issue.

As indicated in the same Table of item 4, the calculated mean of teachers (M=4.36, SD=1.16) and students (M=3.59, SD=1.32) showed that using the mother tongue for instruction enables students to interpret science information obtained more adequately and correctly in the classroom. On the other hand, the calculated t-test value (t=-1.46, p<0.05) showed that there is no significant difference between teachers and students on the issue.

As illustrated in Table 1, item 5, respondents were requested, the calculated mean of teachers (M=4.12, SD=1.28) perceived as low while students (M=4.49, SD=1.20) showed that Teaching using in mother tongue allows students to develop practical skills. On the other hand, the calculated t-test value (t=-6.61, p<0.05) showed that there is a statistically significant difference between the two respondents on the issue. Therefore, it indicated that cooperative-learning approach implementation students independently carried out the given activities are low.

As can be seen in Table 1, item 6, the calculated mean of teachers (M=4.37, SD=1.36) and students (M=3.91, SD=1.36) showed that classroom participation is enhanced if students are allowed to use their mother tongue. On the other hand, the calculated t-test value (t=-1.91, p<0.05) showed that there is a statistically significant difference between the two respondents on the issue.

Table 1, item 7, in this regard, the calculated mean of teachers (M=4.22, SD=1.20) and students (M=4.12, SD=1.08) revealed that Students better understand experiments and experimental procedures when they are taught using their mother tongue. On the other hand, the calculated t-test value (t=1.15, p>0.05) showed that there is no statistically significant difference between the two respondents on the issue. It showed that the arrangement of chairs and tables is not suitable to work different group activities in the classroom.

Table 1 items 8, In this concern, the calculated mean of teachers (M=4.45, SD=1.60) and students (M=3.57, SD=1.26) indicated that the Mother tongue makes science learning effective whether it is written in textbooks or shared orally during the discussion cooperative.

On the other hand, the calculated t-test value (t=-4.14, p<0.05) showed that there is no statistically significant difference between teachers and students on the above issue. From this one can realize that textbook has no adequate activities and exercises that promote a cooperative-learning approach in the school.

Table 1, item 9, the calculated mean of teachers (M=3.90, SD=1.23) and students (M=4.04, SD=1.03) showed that Students who learn technical and nontechnical words in science better when taught in their mother tongue than in English perceived as moderate on the same issue.

<u>9047</u>

On the other hand, the calculated t-test value (t=-.722, p>0.05) showed that there is no statistically significant difference between the two respondents on the issue.

SD=1.04) identify that all learning follows through smoothly once learners have attained some proficiency in their mother tongue. On the other hand, the calculated t-test value (t=3.19,

		Respondents Type			
		Teachers		Students (N=80)	
SN	Items		(N=105)		
		Mean	SD	Mean	SD
1	There is a lack of sufficient science textbooks and teacher	3.88	1.18	3.81	1.10
	guides prepared in the mother tongue language				
2	The whole school system does not encourage teaching	3.7	1.16	3.92	1.20
	and learning in the mother tongue language				
3	The language used in science classrooms is not properly	3.10	1.28	3.63	1.18
	translated to the mother tongue language				
4	Not using mother tongue language at home or using	3.59	1.18	3.35	1.27
	mixed language at home affects its usage				
5	There is a lack of using the updated syllabus and teachers'	3.46	1.40	3.53	1.18
	guides supporting mother tongue language				
6	Teachers' preferences for English/Amharic to mother	2.23	1.16	3.55	1.33
	tongue language in teaching science subjects affect their				
	development				
7	Lack of using technologies like plasma and social media	3.93	1.32	3.28	1.32
	for additional gain while mother tongue is used				
8	An appropriate attitude of learners, parents& society	3.50	1.22	3.58	1.33
	about using mother tongue language teaching in				
	classrooms				
9	Lack of teachers' professional commitment in delivering	3.58	1.21	3.95	1.08
	the content of science using mother tongue language				
10	Lack of short-term training for teachers on how to deliver	3.52	1.20	3.57	1.05
	contents of science using mother tongue				
	n~0.05) s	howed t	hat the	re is no	statistically

Table 1 item 10, the calculated mean of teachers (M=3.55, SD=1.19) and students (M=3.90,

p<0.05) showed that there is no statistically significant difference between the two respondents on the issue.

Table 2: Response of Respondents on the Challenges of using Mother tongue language in teaching science Subjects at Primary Schools

As can be seen in Table 2 item 1, the calculated high mean value of teachers (M=3.88, SD=1.18) and students (M=3.81, SD=1.11) indicated that

there is a lack of sufficient science textbooks and teacher guides prepared in the mother tongue language. Table 2 item 2, the calculated mean of teachers (M=3.7, SD=1.16) and students (M=3.92, SD=1.20) also revealed that the whole school system does not encourage teaching and learning in the mother tongue language. Further, it can be observed from the same table of item 3, the calculated mean of teachers (M=3.10, SD=1.28) and students (M=3.63, SD=1.18) showed that The language used in science classrooms is not properly translated to the mother tongue language

As indicated in the same Table of item 4, the calculated mean of teachers (M=3.59, SD=1.18) and students (M=3.35, SD=1.27) showed that Not using mother-tongue language at home or using mixed language at home affects its usage. As illustrated from Table 2, item 5, respondents were requested, the calculated mean of teachers (M=3.46, SD=1.40) perceived low while students (M=3.53, SD=1.18) showed that there is a lack of using updated syllabus and teachers guide supporting mother tongue language.

Table 2, item 6, in this regard, the calculated mean of teachers (M=2.23, SD=1.16) and students (M=3.55, SD=1.33) revealed that Teachers' preferences for English/Amharic to mother tongue language in teaching science subjects affect its development. Table 2 items 7, In this concern, the calculated mean of teachers (M=3.93, SD=1.32) and students (M=3.28, SD=1.32) indicated that Lack of using technologies like plasma and social media for additional gain while mother tongue is used.

Table 2, item 8, the calculated mean of teachers (M=3.50, SD=1.22) and students (M=3.58, SD=1.33) showed that In an appropriate attitude of learners, parents& society about using mother tongue language teaching in classrooms. Table 2 item 10, the calculated mean of teachers (M=3.52, SD=1.20) and students (M=3.57, SD=1.05) identify that Lack of short-term

training for teachers on how to deliver contents of science using mother tongue language affects the quality of teaching.

CONCLUSIONS

- In this study, the researcher concluded that most teachers have a positive perception of the integration of using their mother tongue for teaching science but not practically implementing it in the class.
- Teachers are positive about taking into account students' prior knowledge learned out of school when teaching and they agreed that the mother tongue is relevant in teaching science concepts.
- Teachers' perceptions about the value and potential contribution of using their mother tongue to sustainable development are also positive.
- All learning follows through smoothly once learners have attained some proficiency in their mother tongue.
- Most teachers have a positive attitude towards the use of the mother tongue for teaching science facts and concepts.
- Teachers' preferences for English/Amharic to mother tongue language in teaching science subjects affect their development
- The whole school system does not encourage teaching and learning in the mother tongue language in the science classes.

- The language used in science classrooms is not properly translated to the mother tongue language
- Not using mother tongue language at home or using mixed language at home affects its usage in the school setting
- Lack of teacher's professional commitment to delivering the content of science using mother tongue language affects the quality of learning.
- Lack of short-term training for teachers on how to deliver contents of science using mother tongue language affects the quality of teaching

RECOMMENDATIONS

Teachers and educators need to examine their practices and develop ways to authentically engage and legitimize the use of mother tongue language for science teaching. The purely Western models of language usage are not capable of addressing the current socio-economic problems at the micro-level. Hence, there is a need to revitalize the presence of mother tongue ways of knowing, pedagogy, and practices in the educational system if Ethiopians are to redefine and re-shape their education within their terms of development.

References

 Abah, J., Mashebe, P. &Denuga, D.D. (2015). Prospects of integrating African indigenous knowledge systems into the teaching of science. Africans. International Journal of Innovative Science and Research Technology. Volume 7, Issue 3, March – 2022

- Aladejana, F.O. & Odejobi, C.O. (1999). Effects of mother tongue on JSS students' performance in Integrated Science. Journal of Behavioral Science, 1(1), 84-89.
- Borich, G. D. & Tombari, M. L. (1997). Educational psychology: A contemporary approach. New York: Longman.
- Cook, V. (2001). Second Language Learning and Language Teaching (3rd ed.). London: Arnold.
- 5. Daniel S. Alemu, Abebayehu Tekleselassie.(2015) Comparative Analysis of Instructional language issues in Ethiopia and United States. Creative Education.
- 6. Day, R. R., & Conklin, G. (1992, March). The knowledge base in ESL/EFL teacher education. Paper presented at the TESOL Conference, Vancouver, British Columbia, Canada.
- De Jong, E. J., & Harper, C. A. (2005). Preparing mainstream teachers for English language learners: Is being a good teacher good enough? Teacher Education Quarterly, 32(2), 101-124.
- Freeman, D., & Johnson, K. E. (1998). Reconceptualizing the knowledge-base of language teacher education. TESOL Quarterly, 32, 397-417
- 9. Hacuta, K. (1990). Bilingualism and bilingual education: A research perspective, no. 1.
- 10. Hirut WoldeMariam(2008). Language planning challenged by identity contestation in a multilingual setting: the case of gamo
- Kelly, M., Grenfell, M., Allan, R., Kriza, C., McEvoy, W. (2004). European profile for language teacher education – A frame of reference. A

Report to the European Commission Directorate General for Education and Culture.

- 12. Kelly, M., Grenfell, M., Gallagher-Brett, A., Jones, D., Richard, L., Hilmarsson-Dunn, A. (2002). The training of teachers of a foreign language: Developments in Europe. A Report to the European Commission, Directorate General for Education and Culture
- Millar R. (2004). The role of practical work in the teaching and learning of science, High school science laboratories: role and vision, Washington DC, USA: National Academy of Sciences, pp. 1-24.
- 14. Mutua, R. 1987. Information on primary teacher training colleges project. Workshop on the training of trainers in educational planning for English speaking countries of eastern and southern Africa. Nairobi: 22 June 10 July 1987.
- 15. Mwaniki, M. 2004. Language planning in South Africa: towards a language management approach (unpublished Ph.D. Thesis). Bloemfontein: University of the Free State
- 16. Neustupny, JV. 1995. Some issues of ordering in interactive competence. In Proceedings of LP'94: Item order in natural languages, ed. B Palek, 10–26. Prague: Charles University.
- 17. Neustupny, JV. 1999.
 Sociolinguistics and the Prague School. In Prague Linguistic Circle Papers 3, 275–286. Amsterdam/ Philadelphia: John Benjamins
- Obanya, P. (1985). Teaching methods across the curriculum. London: Billing and Sons Ltd.
- 19. Olanrewaju, A. O. & Jimoh, M. A. (1995). Effects of Media of

Instruction on Students Performance in Genetics. Journal of Science Teachers Association of Nigeria, 30(12), 47-52.

- 20. Olanrewaju, A.O. (2004). Using Nigeria Languages as Media of Instruction to enhance scientific and Technological Developments: An Action Delayed. Fafunwa Foundation Internet Journal of Education. 18-24
- 21. Olayaoye, A., Ajayi, R., Ugwuoti, S., Ajayi, K., Udoada, M.P. (eds.), Kaduna: NCCE.
- 22. Owu-Ewie, C. (2006). The language policy of education in Ghana: A critical look at the English only language policy on education. In Mugane, J., Woman, J. P., & Samerinthe, M.A. (Eds.) Proceedings of 35th Annual Conference on African Linguistics, African language and Linguistics in Broad Perspectives.
- 23. Pajares, M. (1992).Teachers' Beliefs and Educational Research: Cleaning up a Messy Construct. Review of Educational Research, Vol. 62, No. 3 pp. 307-332
- 24. Rajathurai, N. (2020). Understanding of the Importance of Mother TongueLearning.International Journal of Trend in Scientific Research and Development (IJTSRD)
- 25. Samuel, O. Oyoo(2015).Towards a policy on teacher use of language during science teaching and learning in South Africa. Social Dynamics 46(32):1-22
- 26. Spolsky, B. 2009. Language management. Cambridge: Cambridge University Press.
- Tanye, M. 2008. Access and barriers to education for Ghanaian women and girls. Interchange 39(2):167–184