

**CLASSROOM ACHIEVEMENT IN SEMA, NAGAMESE
AND ENGLISH MEDIUM PRIMARY SCHOOLS
IN NAGALAND**

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28th July, 2008

DECLARATION

This is to certify that the dissertation entitled, "Classroom achievement in Sema, Nagamese and English medium primary schools in Nagaland" submitted by me in partial fulfillment of the requirements for the award of the Degree of Master of Philosophy has not been previously submitted for any other degree of this or any other university. This is my own original work.

TOINALI SEMA

CERTIFICATE

To the best of our knowledge, this is a *bonafide* work. We recommend that this dissertation be placed before examiner for evaluation.

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Abstract

In today's global society, the knowledge of more than one language has become the norm of the day. In education, the choice and use of languages has become important and crucial for the maintenance, preservation and development of languages specially the languages of linguistic minorities. In any multilingual society, the knowledge and acquisition of a major language is necessary for the minority language community speakers in order to help them achieve a meaningful participation in the larger socio-political and economic structure of the country. Theories of bilingual or multilingual education have repeatedly emphasized on the role of the mother tongue medium of instruction during the child's early days of schooling. However, the powerful role of the English language, its association with higher social class and quality of schooling in a society like India, has made most educational institutions' especially in Nagaland to embrace English as a medium of instruction. English is also the official language of Nagaland. Thus, the objective of the present study is to compare the classroom achievement of primary school children in Sema, Nagamese and English medium school in Class III and Class IV where the quality of schooling and SES of the students are controlled. Ninety students from the three schools, with thirty students from each class, were selected as the sample group. They were all administered tests on EVS, Mathematics, BICS and CALP and Meta-Linguistic abilities tests in Sema, Nagamese and English language. The results of the findings were obtained using ANOVA and Mann-Whitney U.

CHAPTER 1

1.1 Introduction

1.2 Mother Tongue and Other Tongue

1.3 Cummins' Theory of Linguistic Interdependence

1.4 Bilingualism or Multilingualism

1.5 Bilingual Educational Programme

1.6 Classification of Bilingual Educational Programmes

1.7 Nature of Indian Multilingualism

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Chapter 1

1.1 INTRODUCTION

The aim of my study is to compare the classroom achievement of primary school children with mother tongue (MT) i.e. Sema and Community language or the Language of wider communication (LWC) i.e. Nagamese medium of instruction with children in English medium school. The study intends to find the difference in the children's classroom achievement in Sema medium of instruction school and Nagamese medium of instruction school with the English medium school children keeping the variables like the quality of schooling, socio-economic status (SES), and parental education under control. Just as it is across the country, in Nagaland too there is a widespread belief in the superiority of English medium schools or the private schools as it is most commonly called. On the other hand, the mother tongue schools which are also known as Government Lower Primary Schools (GLPS) are overlooked by parents when they have to send their children for schooling. Thus, this study will attempt to examine issues that arise out of the differences between the child's home language and the school language and the relationship between the medium of instruction (MI) and the classroom achievements of children.

1.2 MOTHER TONGUE AND OTHER TONGUE

Since its first inception, language has played an important part in fulfilling the needs for human interactions with one another. Language has values, cultures, forms, and meanings. As Mohanty (1994) mentions, "Verbal behaviors', speech acts and communicative functions are culturally coded. The use of language therefore has to be viewed within a holistic framework in which the cultural context and the form and structure of language are necessary parameters." Languages being part of the social system are under a continuous process of change. No language is constant. Even those languages which have become extinct today had undergone a continuous process of facing threats and finally succumbing to extinction. The most important function of language is

communication. However, its first goal is creation which then follows communication. It is only after one speaks the words, meanings are formed or created and then communications follows. Without language there would be no 'creation of communication'. When a word is created, meanings get filled into the word. The meanings of those words is then utilized for speech which can convey what a person is intending to say. As unique and as complex as a language can be, defining 'What is a language?' also becomes too difficult. As languages' meanings, form, pronunciations, etc change from one area or community, culture to another, a language cannot be defined in terms of its linguistic variations or intonations or meanings. However, whether it is verbal or non-verbal language, language's most important function is communication.

Likewise defining 'What is a Mother tongue?' can be a complex phenomenon given the fact that there are no clear cut demarcations on 'What should or what should not constitute a Mother Tongue?' According to Mallikarjun (2001, p.1),

"Defining mother tongue, more often than not, mother tongue becomes more a political idea than a linguistic construct or concept."

Census (2001) defines mother tongue as the language in which the mother talks to a person in his/her childhood or the language spoken in the household or the language of the mother (incase of dumb or small children). It further says that a language need not have a script to be recorded as a mother tongue. And between two languages, it says that whichever language the respondent knows to speak, understand, and communicate should be recorded as first and second language. The person need not know to read and write these languages. For some individuals, Mother tongue is the language in which one can think and act. It necessarily need not be a language which is spoken at home. It can be acquired as one interacts in a social setting. Thus, we see that defining mother tongue becomes a multifarious task keeping in mind the individual, the community or the society and the global world as such. It becomes even more indefinable if we consider languages in a multicultural society especially the tribal languages or the minority languages which indiscriminately gets sidelined, subjugated or thrives along with other mother tongue languages.

In a multilingual society each language has a distinctive function to play. There are languages which are “characteristically used with intimate family and friends, the language generally used with coworkers or neighbors, and the language used with one's bosses or government need not be one and the same (Fishman, 1998-1999, p.35). In education, it has often been argued that the use of mother tongue is crucial for the child’s cognitive, creative and intellectual development. Despite the many difficulties faced during its many practical issues, “the benefits of learning through the mother tongue were recognized as early as 1957 in the UNESCO declaration, which explicitly stated the right of every child to be educated through the mother tongue” (Sridhar, 1994, p.628). Studies by various scholars (Annamalai, 1980; Grosjean, 1982; Hakuta, 1986; Mohanty, 1994 etc) have also found the benefits of learning through a mother tongue medium language of instruction during its early education.

The Zakir Hussain Committee (1938) as quoted in Agnihotri and Khanna (1997, p.28) recommends,

“The proper teaching of the mother tongue is the foundation of all education, without the capacity to speak effectively and to read and write correctly and lucidly, no one can develop precision of thought or clarity of ideas. Moreover, it is a means of introducing the child to the rich heritage of his people’s ideas, emotions and aspirations, and can therefore be made a valuable means of social education while also instilling right ethical and moral values. Also, it is a natural outlet for the expression of the child’s aesthetic sense and appreciation, and if the proper approach is adopted, the study of literature becomes a source of joy and creative appreciation.”

The National Curricular Framework (NCF), 2005 of the National Council for Educational Research and Training (NCERT) also makes an ardent plea for the use of mother tongue in the child’s education system atleast for the first two years of its

schooling. Pattanayak (1991) as quoted in Nayak (2007, p.3) also argues for the use of mother tongue in education when he says,

“...though any language could be used as a language of added comprehension, only the language, in which one lives and grows, is best suited in achieving originality in thought and expression.”

Pattanayak (1986) and De (1981) as also quoted in Nayak (2007, p.4),

“...advocates the use of mother tongue as the medium of instruction at the primary stage of education. ...at a later stage other languages such as Hindi or English can be used as the medium of instruction.”

UNESCO (1953, p.11) recommends,

“Psychologically, socially and educationally a child learns better and faster through their mother tongue.”

Mohanty (1994) also says that the mother tongue is the language in which the child first learns to express himself or herself which in turn becomes a resource for the child's educational development. Thus, he argues in favour of mother tongue education. The use of Mother tongue (MT) whether as a medium of instruction (MI) or as a second language subject in education therefore becomes significant as it acts as a very important vehicle in preserving, maintaining and developing the child's language and ethnic identity, cultures, values, customs, etc. It acts as a medium with which the child progresses towards achieving his or her social, emotional and cognitive academic intellectual goals.

Thus, it becomes imperative that educators and policy makers keep these arguments in mind while framing policies for education so that the mother tongue is nurtured effectively through the school curriculum. However,

“It has to be kept in mind that although in principle all languages have the potential to serve as the medium of instruction in schools, not all languages are equally or totally equipped to do so as of today. A large

number of languages “do not have a script. Many lack printed materials; still others lack literary traditions. Often these minority languages are spoken in third world countries where other pressing demands (such as food, clothing, and housing) must take priority over safeguarding and developing minority languages” (Sridhar, 1994, p. 628).

In a multilingual setting, there is also great disconformities’ between the home language and the school language which negatively affects the school performance of the linguistic minority group of children. Also in a diverse multicultural society, individualizing or personalizing instruction without considering the cultures of all students becomes problematic. The schools also fail to capitalize on the prior knowledge and familiarity of the learner and as a result it fails to generate a level of identification with the language of literary instruction which is necessary for effective learning (Mohanty, 2000).

Thus, we see that basing on international evidences and arguing for the efficacy of instruction in the mother tongue in early classes makes it a little relevant on Indian context. What is needed in our context is a mechanism to translate the theoretical ideas into practice with immediate effect. It is clear that there is a need for more research to be done before we take a stand on such critical issues of using the mother tongue as a medium of instruction in early education of the children. Thus, to fully understand the role of the mother tongue in school and its relationship with the development of other languages, it becomes pertinent to understand the relationship between the proficiency in L1, L2 and other tongue languages. Jim Cummins’ “Theory of Linguistic Interdependence” gives us an understanding on such main theoretical framework.

1.3 CUMMINS' THEORY OF LINGUISTIC INTERDEPENDENCE

Cummins' (1979, 1981 and 1984) in his theory of linguistic interdependence argued for a proficiency in the mother tongue or the first language of the child for the adequate development and transfer of understanding and concepts from the first language to the second language. According to Cummins, there are certain aspects of linguistic proficiency particularly those related to school performances which are common or interdependent at the underlying level. Thus, it is important to see that a child's L1 proficiency is well developed before a second language (L2) is introduced to him/her. Thus, proficiency in L1 i.e. reading writing and comprehending will generalize to L2 only when L1 is developed adequately. As Krashen (1982) as quoted from Nayak (2007, p.5) explains,

“if a second language learner already understands concept X in his L1, then L2 input containing that concept will be considerably more comprehensible than if he does not understand concept X in his L1. Thus, literacy and conceptual knowledge acquired in the first language (L1) will help the individual in easier comprehension of the concepts in the second language (L2). This further strengthens Cummins Interdependence theory which says that unless a child is proficient in his or her first language L1 in the school context, instructions which are given to the child in L2 will be ineffective. This particularly holds true for minority language children, where their mother tongue proficiency becomes a basis for the further development of their second language learning. However, this theory also says that if a child is introduced to a second language before his first language is fully developed, the development of both the first and the second language will be adversely affected. Thus, some children have limited access to ‘cognitive-linguistics operations’ which is necessary to understand L2 and develop literacy skills in the language”.

His threshold theory which is implied in the relationship between L1 and L2 says that,

“There may be a threshold level of bilingual competence which an individual must attain before his access to two languages can begin to positively influence his cognitive functioning.” (Cummins, 1977, p.11)

It says that the children’s bilingual level of competence which is achieved in their two languages acts as an intervening variable in mediating the effects of their bilingual learning experiences on cognition. He says that there are specific threshold levels of linguistic competence which a bilingual child must attain in order to avoid deficits in cognitive development as well as to allow the potentially beneficial aspects of becoming bilingual to influence their cognitive growth. Cummins says that there are two threshold levels: lower threshold and upper threshold. The attainment of lower threshold level of bilingual competence is necessary to avoid any negative cognitive effects on the attainment of the second higher level of bilingual competence. Similarly, he also states that if through interaction with the environment through a particular language, a bilingual child attains a low level of competence in their first or second language, it will affect further development. Thus, a child will need certain amount of proficiency in their first language. Thus, the use of mother tongue in school becomes necessary which will help in facilitating the development of certain academic language skills which will then be generalized to the second language.

Cummins (2000) also differentiated the concept of BICS i.e the Basic Interpersonal Communication Skills and CALP i.e. the Cognitive Academic Language Proficiency. He says that BICS occurs in context-embedded face-to-face conversational situations where the speaker receives non-verbal supports for his or her understanding i.e. there is a contextual support for deliverance of the language. CALP, on the other hand, occurs in a ‘context reduced’ academic situations. It involves the use of conceptual knowledge in vocabulary and ability to use language at an abstract and decontextualised level. Cummins argues that the acquirement of BICS in L1 does not make that child proficient to perform his or her task in a cognitive academic task i.e. L2. That is, the child’s face-to-face

competency in one language should not be considered sufficient for the requirement of a second language use in schools because the academic language's ways of transmitting expertise, culture etc is different from the child's everyday conversational language. For this, he argues CALP in L1 needs to be developed which involves the ability to process L1 linguistic information in a context reduced, cognitively demanding situation where higher order thinking is required. He also suggests developing a bilingual educational programme which can develop the 'common underlying proficiency.' He argues that the surface fluency of L2 of a bilingual develops independently of the surface fluency of L1. But with CALP, he says that CALP of the bilingual develops interdependently with mother tongue or both the languages in an interactive way. Thus, his Theory suggests the use of mother tongue (L1) in the school context for atleast three to five years so that further acquirement of cognitive and academic language proficiency (CALP) in L1 required for learning a second language in schools is achieved.

Cummins (1981) also talks about the Balance effect theory which is based on the belief that when a bilingual child becomes proficient in one language, his or her proficiency in the second language will decrease. This is because people assume that the available linguistic ability of a person is limited and is shared between two languages. Therefore, a person should be devoted only to learning of the language which has more economic value for them in the future. This theory holds true for many people across the country that are of the opinion that since the linguistic minority children are to be educated in the region's major language or the national language at high school, the use of mother tongue in early education is a waste as well as unnecessary. However, as we have seen earlier from the above literature, learning of L1 or the mother tongue during the early years of schooling has a positive effect on the development of the children's second language. This is because languages have an underlying commonality and thus language skills are generalizable. Thus, Cummins' theory provides a rationale for bilingual educational programme especially for the linguistic minorities children in India. It proposes to begin children's school instruction in the mother tongue medium and also develop their L1 so that there is better fostering or competency in L2.

However, it has to be kept in mind that the Indian multilingualism scenario is very different from the western society. The Indian multilingualism has more sociolinguistic complexities than compared to the western bilingualism. Thus, unless these theories on bilingualism or multilingualism are contextualized to our Indian settings, the educational practices cannot be influenced by these theories. Thus, the following sections in this chapter will seek to examine and view the nature of bilingualism or Indian multilingualism and its psycho-educational processes.

1.4 BILINGUALISM OR MULTILINGUALISM

Linguists estimate that there are about approximately 6900 (Ethnologue, 2005) languages spoke in the world today. Due to globalization, large scale immigrations, cultural assimilations etc, many people around the globe are becoming multilingual. Even the once monolingual west has understood the need for a multilingual policy for its people for economic, social, political etc reasons. Cenoz and Genesee (1998) as quoted in Nayak (2007) states that,

“approximately 25% of the world’s 200 countries recognize two or more official languages, with a mere handful recognizing more than two.”

As was discussed earlier with the difficulties in defining “What is a language?” and “What is a mother tongue?” here too defining “What is bilingualism or multilingualism?” becomes an arduous task. Bloomfield (1933) defined bilingualism as “native like control of two languages”. However, this definition of Bloomfield cannot be applied practically because no other speakers of a second language can truly speak with ‘native-like’ efficiency. Lambert gave a balanced view of bilingualism by stating that the L1 capacity with L2 has to match. Grosjean, the French Linguist defined Bilingualism as a total language. His holistic definition of bilingualism says that a bilingual person uses all his language skill to communicate as a native speaker in different context. They achieve the same purpose as a multilingual person. Thus, for a better understanding of the term

bilingualism or multilingualism we need to find the important distinctions and dimensions of the term itself. Generally, bilingualism as quoted in Nayak (2007) can be understood in these terms i.e. “(1) socio or socio-linguistic typologies which primarily focus on the social context and the patterns of language use. (2) Skill based criteria which are psychological in nature and (3) context of development of bilingual skills and the outcome of such development.

According to the socio and socio – linguistic classification, the individual and the societal bilingualism are both distinguished. It says that individual bilingualism occurs as a result of social, political, historical and other processes in the society. The societal bilingualism can also be as varied and as unique as individual bilingualism.

“How much bilingual is a person?” depends on the proficiency level of the individual involved. Many researches have also been conducted by researchers across the globe to find and discuss the above. ‘Semilingualism’ and ‘Balanced Bilingual’ are two terms that have arose from these studies. Semilingualism means the level of bilingualism where the individual is not proficient in either his or her L1 and L2 languages. On the other hand, ‘Balanced bilinguals’ are those individuals whose competencies in both L1 and L2 are comparable.

Apart from the above typologies of bilingualism, there are ‘Additive’ and ‘Subtractive’ bilingualisms as was given by Lambert in 1975. According to Lambert, ‘Additive bilingualism’ happens when a person’s L2 develops in a complementary and supportive relationship along with their L1. The development of L2 does not have a negative effect on the L1 proficiency. On the other hand, ‘Subtractive bilingualism’ occurs when as the L2 is developed in a person, his or her proficiency L1 will decline. This type of situation Lambert says is found in minority language children, where the socio-cultural

context in which L1 of the minority children is treated with lower prestige and L2 is a dominant language.

1.5 BILINGUAL EDUCATIONAL PROGRAMME

Bennett (2001, p.172) states,

“Since its beginnings and continuing into the present, multicultural education has been perceived as lacking definition and purpose (e.g., Gibson, 1976, 1984; Hoffman, 1996; Sleeter & Grant, 1987), posing a threat to continued vision and accomplishment. The complexity seems invisible to critics who ask for research studies to show that multicultural education works.”

Defining ‘what is bilingual or multilingual education?’ is as complex as the varied and interlapping bilingual/ multilingual education programmes typologies given by various researchers and scholars from around the globe: Fishman and Lovas (1970); Mackey (1972); Gonzales (1975); Troike (1978, 1979); Baker & de Kanter (1981); Skutnab-Kangas (1984). India is multicultural and multilingual. Since most of the western studies on mother tongue education are focused on the monolingual programmes, these programmes cannot be applied to the Indian context. The monolingual programme of mother tongue is not sufficient for the linguistic minority children because they have to be educated in the majority regional language and a language of inter-regional communication. It applies the same to the children who speak the majority languages too because they have to learn at least one other major national language (Mohanty, 1994).

Khubchandani (1978, p. 378) states that

“Though the policy of bilingual media is, by and large, not encouraged in ‘prestigious’ institutions, in actual practice one notices a good deal of code-switching and hybridization of two or more contact languages in informal teaching settings.”

Bilingual education means the use of two languages as a medium of instruction for learning. The definition given by Skutnab-Kangas (1984, P.125-135) describes bilingual education as that which

“...relates only to language of instruction and requires that atleast two languages should be used as a means of instruction in subjects other than the languages themselves.”

However, depending on the objectives of the particular programme and the type and needs of the students, the nature of the medium of instruction and the timings of two languages are introduced. Thus, going by this definition, we can loosely categorize the educational system in Nagaland as bilingual or multilingual. And as Mohanty (1994, P.175) says

“In a way, almost all the educational programmes in India can be called bilingual or multilingual education programmes in a very loose sense of the term since the school programmes invariably include teaching of at least two or three languages in their curriculum.”

1.6 CLASSIFICATION OF BILINGUAL EDUCATIONAL PROGRAMMES

Several researchers have proposed various types of bilingual education programmes with each emphasizing or focusing their studies on the goals and objectives of bilingual education, the methods and nature of curriculum etc. However, Khubchandani (1978, p. 379) states that

“Though many states have a policy of promoting the 'exclusive' use of mother tongue as medium of instruction, in actual practice many students experience shift in language medium at one or another stage of their educational career, depending upon the context, domain, and channel.”

The following pages will discuss in detail the various studies.

Fishman and Lovas (1970) proposed a four types of bilingual educational programme based on the different kinds of community and school objectives. They are transitional bilingualism, monoliterate bilingualism, partial bilingualism and full bilingualism. Mackey (1972) also proposed four types of bilingual education programmes based on, namely, (a) the relationship between home and school language, (b) the pattern of distribution of languages in the curriculum in the school, (c) the linguistic character of the immediate environment as compared to the wider national environment and (d) the function and the status of languages and differences between them.

Skutnab-Kangas (1984) has also identified seven types of bilingual education programmes. They are as follows:

Monolingual Education in the Medium of Majority Language: According to Skutnab-Kangas, this type of educational policy is most prevalent in the western society where the majority language children are given education in the majority language. The main aim of this type of education is to spread monolingualism. However, sometimes these children are given instruction in a minority language but these second language instructions are only provided as a separate subject. Thus, this type of bilingual education is not a true bilingual educational programme.

Submersion Programme: In this type of programme, the minority language children are placed in the mainstream education where the teachers and the majority or minority children speak the majority language in the class. The minority language is not taught as a subject in school either. The aim of this programme is to assimilate the minority language children with the majority language children resulting in monolingualism.

Segregationist Programmes: Here, the minority language children are taught in their minority language only. This type of programmes is common in apartheid situations like education for different types of African groups in their 'homelands' or segregation areas in

South Africa. The main aim of this type of educational programme is to maintain a subservience and segregation of the poor by the ruling elite which leads to nonlingualism. As people become ignorant of the power language, they become less influenced and thus lead to powerlessness in the long run.

Language Shelter and Mother Tongue Maintenance Programmes: Also known as maintenance bilingual education or developmental maintenance bilingual education (US) or Heritage language Bilingual Education. According to Baker (2006, p.238), this type of educational programme

“...is a ‘strong form of bilingual education’ where the ‘language minority children use their native, ethnic, home or heritage language in the school as a medium of instruction with the goal of full bilingualism. ...The native language is protected and cultivated alongside development in the majority language.’”

This programme has been found to be quite successful in countries like Sweden, Finland, and Canada etc (Skutnabb-Kangas, 1984, p.129). According to Wiley as quoted in Baker (2006, p. 239),

“This type of education is found in schools and classes for established and recent immigrant language groups and communities-based language initiatives. The heritage language is the MI for about 50% of the day.”

Cummins (1992a) as quoted in Baker (2006, p.240) further explains that this type of education

“...means education of language minority children through their minority and majority language.”

Immersion Programme: This programme is derived from a Canadian educational experiment in 1960. This type of educational programme thrives on conviction, not on conformity (Baker, 2006, p.246). In this kind of educational programme the language

majority children are taught in a minority language (L2) medium of instruction during the early years of schooling and later on they are taught in their majority language tongue (L1). The aim of this kind of programme is to promote high level of proficiency in both the minority (L2) and majority (L1) languages even if the majority language is not the medium of instruction in the early years of education.

Transitional Programme of Bilingual Education: In this type of educational programme, children are taught in the minority language in the beginning and later on when they show competency in their interpersonal communication they completely switch over to the majority language medium. The minority language is not even taught as a school subject during the later years of schooling which leads to the poor performance of children in educational programme. Thus, the goal of this programme is 'language shift' i.e. to assimilate the minority linguistic groups' language and culture into the majority culture.

Functional or Utopian Bilingual Education Programme: Given in 1984, the goal of this educational programme is to increase the level of proficiency of children in both Minority language (L1) and majority language (L2). Thus, the children in these classrooms are taught both in the minority and the majority languages. The time and effort allotted for the use and teaching of these two languages are dependent on the degree of support required for the two languages.

Apart from the above educational programmes, there are also other bilingual programmes as is given in Baker (2006). They are as follows:

Dual language or two-way bilingual education programme: This type of programmes was developed in US Cuban community. This educational programmes occurs typically when there are approximately an equal number of language minorities and language majority students in the classroom and both their languages are used for instruction. The language minority children are expected to become literate in their native language as well as in the majority language. Also the majority language children are expected to make a 'normal progress' in their first language and in all content areas of curriculum. The aim of this

programme is to produce a relatively balanced bilinguals (Lindholm-Leary, 2001), biliterate and multicultural children (Baker, 2006, p.231).

Bilingual Education in Majority Languages: In this type of education program, there is a joint use of two or more majority languages in a school. Here much of the populations are already bilinguals/multilingual or most of them are waiting to become bilinguals. The classroom is composed of majority language children with variations in the language heterogeneity or language homogeneity. Some of the curriculum is learnt through L2. This type of schools teaches a heritage language and not just includes Heritage Language Children and may include other native language children as well. The basic aim for this type of educational programme is for bilingual/multilingual – one regional language and one international language, biliteracy and cultural pluralism. (Mejia, 2002, p.250)

Mainstream Education with Foreign Language Teaching: Also called as core programme (Canada) or 'drip-feed' language programme (Wales and elsewhere). The language majority children are taught in the majority medium of instruction with often a second language teaching i.e. a foreign language. It highlights the elements of language in mainstream schooling. The second (foreign) language lessons constitute the sole 'other' language diet. However, this type of educational programme rarely produces functionally bilingual children (Baker, 2006, p.224).

Sridhar (1994, p. 630) states

“Research in language maintenance shows repeatedly that minority languages become extinct when communities come under the economic/political influence of a more dominant language. In such cases, people choose to switch to a language that is considered more powerful and prestigious and that will help them with upward mobility.”

Also extensive researches have been done by scholars on bilingual projects, programmes and experiences which have yielded different results and conclusions. The effectiveness of bilingual education programmes has also created different public opinions. Some of the reasons for such divided results are due to the sample choice, the interacting factors, the measures of success, researchers' biases etc which have been discussed in detail below.

The Sample Choice

Some of the reasons why the studies on the effectiveness of bilingual educational programmes have not yielded consistent results are due to the inconsistency in the sample size being drawn. Some samples were drawn from the rural areas while some were drawn from the urban areas. Also the various social class backgrounds were different, the age groups of children taken for the sample were also differently drawn, the motivational levels of the children varied etc. Thus, we see that the generalizations made after the analysis of results were unethical.

Measures of success

As the measures of success for bilingual education are restricted, it becomes controversial. Also one does not know whether the performance of children across the whole curriculum or special aspects of schooling should be assessed thus evaluating these measures become complicated. As most of the information which is collected from these children is quantitative, the evidences are rarely gathered.

Interacting Factors

There are a number of factors which work together to influence the outcome of the bilingual or multilingual education programmes. The other factors which influence the outcomes of the result are parental interests, parental involvement in their children's education, parental education, teacher-student relationships, students' motivational levels, teachers' interest or qualification etc.

Researchers' biases

It is often argued that researchers have their hypotheses which hide their expectations. No research is totally value free, neutral or objective. The tools used i.e. questionnaires, methodological tools, and decisions in analysis and the manner of the researcher's report usually always brings in their biases. Thus, for the effectiveness of bilingual education one has to consider the children, teachers, the community, school and the types of programmes being implanted.

1.7 NATURE OF INDIAN MULTILINGUALISM

As discussed earlier, Indian bilingualism or multilingualism is unique because it is supported by the various social systems. The social context in which bilingualism occurs influences the consequences of bilingualism. Khubchandani (1978, p. 375) states "The acculturation process among migrants has, to a great extent, been voluntary and gradual. In this way India, as a language area, is one of the most interesting laboratories of multilingual experience in the world. Lambert's additive and subtractive bilingualism denotes how the second language acquisition context has both the positive as well as negative consequence for the first language. These concepts have been found to be useful in explaining the nature of relationship between bilingualism and its cognitive consequences which takes into consideration the socio-linguistic and social psychological dimensions of bilingualism. Studies by Southworth (1980) and Mohanty (1982) have showed that the effects of Indian bilingualism as very different from Western bilingualism. However, as Sridhar (1994, p. 629) states the

"different minority language groups have different attitudes toward their native language. Some have a strong attachment to their language and view it as a symbol of their identity, whereas others view it as a language of minimum utility (Sridhar, 1989).

It is in such contexts that the maintenance of minority languages as mother tongues becomes difficult.

According to Mallikarjun (2001) there are a “total of 114 languages and 216 mother tongues, 22 scheduled languages (Census 2004) and 96 not specified in the schedule (Census 1991). Bhatia and Ritchie (2004) say that the linguistic diversity of India is the ‘Hallmark of India.’ Pattanayak (1984, p.44) very appropriately sums up Indian multilingualism as

‘If one draws a straight line between Kashmir and Kanyakumari and marks, say, every five or ten miles then one will find that there is no break in communication between any two consecutive points.’

In Indian multilingualism, there is fluidity of linguistic boundaries (Khubchandani.) The Indian belief system accommodates to different belief systems thus creates a multiplicity of identities.

Mohanty (1991, 1994) showed how the characteristics of Indian sociolinguistic context and the different ethos of languages in India differ from the western monolingual societies. He says that India is bilingual at the grass-root level. Majority of the population in India use atleast two languages for their daily routine life. The languages have thrived with one another without threatening the existence of other languages for generations. Language contact situation in India is maintenance oriented and non-competitive. Thus, Pandit (1977) says that in India language maintenance is a norm and language shift a deviation. Also as quoted in Nayak (2007, p.17)

“Indian multilingualism is characterized by different set of values and functional significance of bilingualism at the individual and societal levels compared to most western societies.”

Mohanty’s (1982) studies on the Kond tribe showed the Kui-Oriya bilingualism, based on the maintenance of indigenous Kui language, has a positive effect on the cognitive, linguistic and academic performances of children than compared to the Oriya monolinguals as a result of shift of Kui language. Kui being a minority language of the

Kond tribe, it does not receive strong promotion outside the school environment nor does it receive strong support from the society at large. Thus, to develop those developmental aspects of the language skill in Kui which in turn will facilitate the acquisition of L2 was necessary. Mohanty's (1994) studies also showed a positive relationship between bilingualism and cognitive development.

Studies by Bain (1975), Liedke and Nelson (1968), Peal and Lambert (1962) found that bilingual children were more advanced in their general intellectual development than those children who were unilingual. (Cummins, 1983, p.128)

Southworth (1980) also found that the effects of bilingualism is different in India than compared to the Western societies because bilingualism and its impact on the individual, cognitive and scholastic attainment cannot be understood in isolation from the social conditions in which bilingualism occurs. In a multicultural society like India, bilingualism fosters a special analytic orientation, cognitive flexibility and enriched worldview (Nayak, 2007, p.17). Albert and Obler (1979) in their book "The Bilingual Brain" (Cummins, p.120) found that

"Bilinguals mature earlier than monolinguals both in terms of cerebral lateralization for language and in acquiring skills for linguistic abstraction. Bilinguals have better developed auditory language skills than monolinguals, but there is no clear evidence that they differ from monolinguals in written skills" (1979, p. 243).

Thus, bilingualism in India is the first step towards achieving multilingualism. Indian case studies show, minority languages can survive and thrive even in economically weaker situations if the society as a whole respects, not just tolerates, differences. In short, the only hope for the survival of a linguistic or cultural minority is a genuine, positive commitment to multiculturalism. (Sridhar, 1994, p.630)

1.8 TRIBAL LANGUAGES/MINORITY LANGUAGES

The tribal languages or most minority languages across the globe have been under constant threats of extinction. More specifically in a multicultural environment protecting, maintaining and preserving these minority languages from the challenges brought about by political, socio-cultural, economic, religious, geographical etc reasons have become an uphill task. As pointed by Agnihotri and Khanna (1997), p.11, language is

“...a marker of identity and often its role as an identity marker may be more powerful than its role as a means of communication.”

According to Bennett, 2001, p.192,

“Ethnic identity refers to the degree to which a person feels connected with a “racial” or cultural group, one’s familial ethnic group while growing up. It is a complex cluster of factors such as self-labeling, feelings of belonging or feeling set apart, and a desire to participate in activities associated with the group.”

Fishman (1998-1999, p.32) also argues,

‘In most communities, local languages... serve a strong symbolic function as a clear mark of “authenticity.” The sum total of a community’s shared historical experience, authenticity reflects a perceived line from a culturally idealized past to the present, carried by the language and traditions associated (sometimes dubiously) with the community’s origins.’

He further argues that

“Throughout most of recorded history, strong languages have refused to share power with smaller ones and have accused them of making trouble—disturbing the peace and promoting ethnic violence and separatism.”

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However it has to be kept in mind that

“Those who fear their own powerlessness and the demise of their beloved languages of authenticity have reasons to believe that most of the trouble comes from the opposite end of the language-and power continuum. Small communities accuse these linguistic Big Brothers of imperialism, linguicide, genocide, and mind control. (Fishman, 1998-1999. p.36)

In Nagaland, there are 16 major languages with English as the official language and Nagamese as the Language of Wider Communication (LWC). The tribal languages or the dialects, as they are most commonly called, along with Nagamese have no script of its own and uses the roman script for writing. The most prominent reason for this outcome is due to the naïve acceptance of the dominant English language script, brought in by the Christian missionaries, by the Naga society. The reverence for the ‘white man’s language’ overwhelmingly arrested the ‘barbaric’ tribal society’s imaginations that till today any attempts to develop a writing system is met with instant impediments. This ailing fact is echoed by Pattanayak (2001), p. 48, when he writes

“Many tribal languages are facing extinction due to the apathy of their users and lack of support of the governments.”

Also,

“Two more factors have contributed to a greater acceptance of English by non- Hindi groups. The first concerns a comparatively higher incidence of bilingualism in English among them, and the second the inadequacy of Hindi as an alternative to English.” (Dua, P.295)

However, Wardaugh (1987: 15), points out that English is

"tied to no particular social, political, economic or religious system, nor to a specific racial or cultural group" but "belongs to no one, or at least is quite often regarded as having this property."

Second, neither individuals nor groups can be considered "neutral" with respect to language in a particular social context, partly because of their perceptions of the function and status of language, and partly because of their competence in it, but also because of its salience to definitions of intergroup relations (Dua, 1993, P.300).

Agnihotri and Khanna (1997, P.19) writes that tribal languages or dialects

"...does not get written for the lack of social, political and economic power."

Pattanayak (1978),

"...the minority is constantly under the threat of assimilation. When under the compulsions of economy, the family structure is loosened, the social organization faces disintegration, the handicrafts and other finer cultural traits of distinctness face extinction."

Kelman (1971: 44) as quoted in Dua (1993, p.299) acknowledges that the choice of the ex-colonial language may exaggerate inequalities on a class basis, "perpetuate elitism and a lopsided structure," and "weaken the links of the population with the centre"

Thus, the process of marginalization of the tribal languages pushes them out of their own domains at many places. Thus, in the present day Nagaland, one can easily witness the presence of the English language or the roman script in every tribal's culture, languages, literatures, etc that a marked presence of diglossia (Ferguson, 1959) is found in the society. Dua (1993, p. 299) states that

“Undue emphasis on the ex-colonial language in the form of its imposition in primary classes or its use as a medium of instruction leads to loss of cognitive flexibility and original and creative thinking. (Pattanayak, 1984)

Similarly, Pattanayak shows that education using the ex-colonial language may promote cultural rootedness and alienation. However, the assimilation of English language into the society is not seen as negative nor it is seen as an alien language but as Dua (1994, p.6), puts it, the English language

“...is not tied to any ‘particular social, political, economic or religious system, nor to a specific racial or cultural group’ but ‘it belongs to everyone...”

“English itself is becoming regionalized informally and orally, particularly among young people, because most speakers today use it as a second or third language. As students of English are increasingly taught by instructors who have had little or no contact with native speakers, spoken English acquires strong regional idiosyncrasies. At the same time, however, English is being globalized in the realms of business, government, entertainment, and education.” (Fishman, 1998-1999, P.38)

The reasons for the high literacy level in Nagaland- 67.11% in 2001 which was much higher than the national average can be partly attributed to the above factor. However, this figure can be a misleading because the ground realities’ are far from the aims of Sarva Shiksha Abhiyan (SSA) *“to provide useful and relevant elementary education for all children in the 6-14 age groups by 2010.”* As Fishman (1997: 118) as quoted in Dua (1993, p.300) states *“the learning of English as a national language in multilingual developing societies can be seen to have serious consequences for both social relations and the development of linguistic resources. The main reason is that there is not only linguistic hierarchy but also a great deal of linguistic inequality in developing nations.”*

1.9 EDUCATION IN NAGALAND

Education in Nagaland is most commonly taught through the medium of English. Even the Mother Tongue (MT) schools or most understandably the Government Primary Schools (GPS) across the state can be termed as semi – Mother Tongue schools (S-MTS)* {*S-MTS meaning the medium of instruction is in a mother tongue (MT) but the classroom text books are in the second language. (L2)}. This system of education has been typified by Khubchandani (1978, p. 379) into three categories, namely, (1) Passive and active media: In this type of class, the students listen to lectures in one language and write answers in another. (2) Formal and informal media: Here, formal teaching in the classroom is conducted in one language, but informal explanations are provided in another language. (3) Multi-tier media: Elementary education is initiated through mother tongue as the preparatory medium, but when a student moves upward in the education ladder, he has to shift to a more cultivated medium.” He further states that “Though many states have a policy of promoting the 'exclusive' use of mother tongue as medium of instruction, in actual practice many students experience shift in language medium at one or another stage of their educational career, depending upon the context, domain, and channel.”

As English education is treated with the greatest regard in the state, across the past one decade, the state has witnessed the mushrooming of many private English Medium Schools (*Mishra, Suresh, Rio in Returns to Scale in the Private School Industry of Nagaland: A Production Function Approach' from 'The ICFAI Journal of Industrial Economics, Vol.III, 2006, February, P. 40-51'*). However, the reasons for the increasing demand and growth of private English schools are mostly contributed by the poor quality of schooling, teacher absenteeism's, poor infrastructures and management, lack of community awareness and participation, poor results etc in most GPS across the state. Thus, to check the deteriorating conditions and poor outcome of results in most GPS schools, the state government under the Sarva Shiksha Abhiyaan (SSA) 'Communitised' education in Nagaland under the “*Nagaland Communitisation of Public Institutions and Services Act 2002 (Act No. 2 of 2002 notified on April 15, 2002)*. According to Chang, P. Chuba, Nagaland Minister of School Education (2002 -2003, p.7), this was done

“to involve the community at the grass roots level in running, sharing as well as owing responsibilities in the management of elementary education....”.

Thus, MT schools in Nagaland means GPS where the medium of instruction (MI) for classroom communications is most commonly the language of the majority tribes in which the school is situated. In cases where no majority tribes are found in an area, Nagamese or the Language of Wider Communication (LWC) is the medium of instruction. However, all these Mother Tongue Schools use ‘English language text books’ which are provided free of cost to the students by the Department of School Education. The mother tongue or Hindi is taught as a second language subject in all of these schools.

The private English medium schools on the other hand uses English as the medium of instruction as well as the classroom textbooks are in English. Hindi or any one of the tribal languages is taught as a second language subject like in the GPS. The following Fig 1.1 given below distinguishes the mother tongue (MT) or the S-MTS Schools from the English medium school in Nagaland, which is also the researcher’s area of study interest.

School	MI	Text Book	Community Language	Home Language
Nagamese Medium	Nagamese English	English, Hindi(2 nd L)	Kachari Nagamese	Kachari Bangla
Sema Medium	Sema English	English, Sema(2 nd L)	Sema Nagamese	Sema
English Medium	English	English, Sema(2 nd L)	Sema Nagamese	Sema

Figure 1.1: Type of schools in Nagaland

In Nagaland, the 'oral tradition' of the tribes and the naïve acceptance of English as the better language has in many ways widened the ignorance of the tribal communities in understanding the importance and thereby acknowledging the uniqueness and beauty of their languages, its cultures and customs etc. Thus, preserving these languages - native language, ethnic language, minority language, ancestral language, aboriginal language, community language (UK & Australia), has become important because as it is pointed out by Vijayan Unni, M. (Dr) as quoted in Pattanayak (2001, p. 49) who says,

"...if a language dies, thousands of years of experience, history, cultural diversity and the very identity of the people is lost forever."

Also as "most of the minority languages have no script, have small numbers of speakers, and are often distributed across state lines, thereby precluding political clout or official recognition. For these reasons, parents fear that their children will suffer (economically) if they do not learn the official language(s) of the country or the region. Minority languages are often thus sacrificed in favor of learning more "useful," "powerful," "prestigious" languages (Sridhar, 1994, p.629). Dua (1993, p. 301 - 302) states

"English has become the universal language of science" and "it is assumed that developing nations cannot quickly achieve modernization without its use in education. Thus in India the role of a language for modernization has become a source of conflict between the national language and the ex-colonial language."

He further states that

"While the national language as well as other Indian languages is used as media of instruction at the primary and secondary levels of education, the ex-colonial language is invariably used for higher scientific and technical education. This practice has not only constrained the promotion and development of the major Indian

languages but also contributed tremendously to the status and significance of the ex-colonial language.”

Therefore, with the basic aim of creating awareness and preserving the tribal languages and its cultures amongst the younger generation, MT was introduced in the school curriculum as a second language (L2) subject. For many eminent scholars like Pattanayak (1986) as quoted in Mohanty (1994, p. 174), the mother tongue educational means

“...the fundamental right” of the citizens.”

However, one needs to understand that

“Reading advanced technical or economic material may require literacy in a different language than reading a local gossip column. As long as no two or more languages are rivals for the same societal function, a linguistic division of labor can be both amicable and long-standing.”
(Fishman, 1998-1999, p.35)

In India many studies by Altena & Apple (1982), Baker & de Kanter (1981), Cummins (1983), Lofgren & Ouvinen – Birgerstam (1982), Modiano (1968) etc have proved the effectiveness of teaching children through the MT. However, as Baker (2006, P.240) mentions this type of educational program can

“...produce a new breed of language speakers and ensure a deeper language and cultural roots for native speakers.”

As Bennett (2001, p. 192) says,

“Multicultural competence includes the ability to interpret intentional communications (language, signs, gestures), unconscious cues (such as body language), and customs in cultural styles different from one’s

home culture. It varies along a continuum of high to low, and the interculturally competent person can communicate and empathize to some degree with culturally different others and is well aware of (p.191) his or her own culturally conditioned assumptions. Since an individual's knowledge, attitudes and beliefs are limited by opportunities to experience and learn about the cultural heritage of his or her primary heritage group, there is a great deal of diversity within any one group. Individuals also differ in their access to multiple cultures and therefore differ in their multicultural competence."

A matter of great concern to educationists for a long time has been the issues of content, spread, and medium of instruction. Khubchandani (1978, p. 377) states,

"The multiplicity of mother tongues in various regions has led to the re-examination of the supremacy of the mother tongue as medium stretched over the entire educational span."

We have seen that Bilingual or multilingual education

"requires a high degree of planning, a proficiency in the language of the classroom and in the language(s) of learners, and a high level of skill in teaching." The various "constraints in the spread of education are attributed to the multiplicity of languages, whereas the real issues to cope with are the confrontation between 'tradition' and 'modernity' concerning the role of language in education, and dogmatic rigidity in claiming privileges for different languages in the education curriculum (p.379).

We have seen that in recent years,

"many political and academic agencies have lent their support to the claims of education being imparted through either a single dominant

language in the region or through some sort of compartmentalized or selective bilingual media, in order to keep pace with the socio-economic demands of rapid modernization.”

Thus keeping this in mind, Indian educational policies must strive to be in accordance with the theoretical framework of multilingual education. Also it should be kept in mind to differentiate the roles of mother tongue and non-native languages as media of instruction.

CHAPTER 2

2.1 Rationale of the study

2.2 Problem

2.3 Hypotheses

Chapter 2

2.1 RATIONALE OF THE STUDY

The previous chapter discussed the number of studies which had been conducted on the effect of bilingualism or multilingualism on the cognitive and academic performances of children. It discussed specifically the studies conducted after 1960 which showed a positive effect in overcoming the methodological problems faced in the earlier studies. These studies showed that the bilingual and multilingual children performed better than the monolinguals on tasks of cognitive abilities, tasks of creativity and reasoning, flexibility and Meta-linguistic awareness. Thus, the findings from these studies further paved the way to the Meta-linguistic hypotheses development which could explain better performance of bilinguals compared to monolinguals.

Most of the studies conducted before 1960's had showed a negative cognitive consequences of bilingualism. The analysis of these studies showed serious methodological problems such as the failure to control the important confounding variables like SES, language of the test, level of proficiency of bilinguals and other related variables. The samples taken for bilingual and monolingual groups were from different cultures. The bilinguals belonged to a lower socio-economic status group and were stigmatized as immigrants. Thus, the effects of bilingualism and socio-cultural differences were confounded by these factors. These findings from these studies showed that a valid comparison between bilinguals and monolinguals can be made only when the two groups are drawn from the same culture and when some other possible confounding variable are controlled for.

Studies by Baker & de Kanter (1981), Cummins (1984), Skutabb-Kangas (1984), Pattanayak (1986), Mohanty (1994), Nayak (2007) etc have all found that Mother Tongue education plays an important role in children's cognitive academic proficiency level and

stresses upon the use of mother tongue as a Medium of Instruction in classrooms particularly for linguistic minority children. These studies were unique because the samples for the study – bilinguals and monolinguals, were both taken from the same culture, same socio-economic status group and other aspects of culture except for the pattern of language use. These samples were controlled on a number of measures like flexibility of cognitive development, creativity and reasoning etc.

The Kond studies by Mohanty(1994) on the monolingual and bilingual Konds (a tribe based in Orissa) found that bilinguals were better than the monolinguals in their Basic interpersonal communications skills (BICS) as well as their Cognitive Academic Language proficiency (CALP). It showed that when a linguistic minority group becomes bilingual by maintaining its own language in addition to another majority language, it leads to better cognitive, intellectual and scholastic performances. The studies helped in providing strong support to bilingual superiority to monolinguals. Thus, the findings from these studies helped in furthering the extension of the Meta-linguistic hypotheses to Meta-cognitive hypotheses (Mohanty, 2003).

Rosell and Keith's review (1996) of 75 studies as quoted in Baker (2006, p.226) also revealed that "the use of native language instruction helps achievement in English." Thus, it becomes essential that the mother tongue and the languages of the linguistic minorities are maintained, developed and kept alive. Researches by scholars such as Cummins (1983, 1984, and 1992) and Skutnabb-Kangas (1994) have showed the importance and effectiveness of mother-tongue based medium of instruction on the child's cognitive understanding and development. Studies by Ure (1981) as quoted in Nayak (2007) showed that the mother tongue medium of instruction has three roles to play, namely it acts as a vehicle of traditional values, as a tool for creative thought and as a link between the child and his or her home language. However, Valdes (1997) as quoted in Baker (2006, p.267) notes it is also important to know that these bilingual students face many issues beyond language, at home and at school, which affect their achievement. "The

effectiveness of multilingual classroom (bilingual education),” as Baker (2006, p.261) notes, “is influenced “by the social, economic, political and cultural context of such education.”

The theoretical framework for the rationale for bilingual educational programme for maintaining mother tongues was given by Cummins (1979, 1984 and 1991). According to Cummins, there are certain aspects of linguistic proficiency particularly those related to school performances which are common or interdependent at the underlying level. Thus, it is important to see that a child’s L1 proficiency is well developed before a second language (L2) is introduced to him/her. He also suggests that the child’s face-to-face competency in one language should not be considered sufficient for the requirement of a second language use in schools because the academic language’s ways of transmitting expertise, culture etc is different from the child’s everyday conversational language. Thus, the concept of BICS i.e. Basic Interpersonal Communicating Skills and CALP i.e. Cognitive Academic Language Proficiency were distinguished from each other.

According to Cummins (1984, 2000), BICS occur in context-embedded face-to-face conversational situations whereas CALP involves the use of conceptual knowledge in vocabulary and ability to use language at an abstract and decontextualised level. Thus, the child must continue to develop the home based skill in L1 in the school for atleast three to five years so that further acquirement of cognitive and academic language proficiency in L1 required for learning a second language in schools is achieved.

Cummins (1977, p.11) in his *Threshold theory* says,

“...there may be a threshold level of bilingual competence which an individual must attain before his access to two languages can begin to positively influence his cognitive functioning.”

It says that the children’s bilingual level of competence which is achieved in their two languages acts as an intervening variable in mediating the effects of their bilingual learning

experiences on cognition. The attainment of lower threshold level of bilingual competence is necessary to avoid any negative cognitive effects on the attainment of the second higher level of bilingual competence. Thus, the use of mother tongue in school becomes necessary which will help in facilitating the development of certain academic language skills which will then be generalized to the second language.

As quoted in Nayak (2007. P.33), Schon (1983) supporting the use of mother tongue as a medium of instruction in the initial stages of a non-English speaking child's education concludes that

“...such a type of education fosters academic achievement, cognitive growth and achievement of harmonious identity with their own culture and the culture of the majority society.”

In India, bilingualism is intrinsically linked to the country's social system. It is characterized by a “grassroots types of multilingualism in which languages are maintained in a non-competitive and differentiated role relationship” (Mohanty, 1994). In Nagaland or for that matter in India as a whole, bilingualism at the individual and societal level is accepted as a norm and languages and dialects are complementarily distributed in individual's language use domains. Languages are maintained in a non-competitive and differential role relationship (Mohanty, 1994). Pandit (1977), Southworth (1980), Pattanayak (1981), Annamalai (1986), Khubchandani (1986), Dua (1986) etc have all written extensively on this issues of language maintenance being a norm in India. However, the maintenance norms adopted by the minority, tribal languages do not ensure equality of power and opportunity to speakers of all these languages. (Mohanty, 2006) The constitution of India too recognizes only 22 languages as national languages. There is a widespread negligence of mother tongue languages in education which researches shows is leading to the underachievement and ‘push-out’ of minority language children in schools.

Contrary to the above facts, English is widely used as a Medium of Instruction at all levels of schooling. Most schools across India teach English as a compulsory subject from Class I onwards. English is given more importance in education compared to mother tongues of the children. Some studies in India were conducted by Srivastava & Khatoon (1980), Patra (2000), Saikia and Mohanty (1994, 2004), Nayak (2007) etc which showed that the Mother tongue medium school children performed better than the non-Mother Tongue or the English medium school children. The reasons for their better performances were due to factors like the quality of schooling, socio-economic background of the children, the parental or home support to children, the school and community environments, differences in school materials, teaching methods, teaching aid used, etc. Thus, looking at the given studies results, one needs to ask questions which can further discuss the issues relating to English medium education versus the mother tongue medium education.

Today, it is widely believed and accepted that education in English medium schools is better because it gives the children passing out from these schools more edge than the non-English medium school children. The parents tend to believe that educating a child in an English medium school will help their child obtain better status and goals in their future lives. In other words, English education has become more of a status symbol than providing quality education to children. The performances of their children are not looked into either and they children tend to perform bad because they do not receive any extra efforts outside their school environment. However, the demand for English education has given rise to many low quality English medium schools in Nagaland as well as across India over the past one decade. These schools charge lesser fees compared to the better quality and prestigious English medium schools. The parents tend to believe that as long as their children get educated in English, the quality of school does not matter.

Thus, some framework questions arising out of these are as follows:

- 1) Are the English Medium Schools necessarily better than the Mother Tongue medium schools?

- 2) Does the socio-economic status of which the child belongs to gives specific advantages to learners in the English medium?
- 3) Has the child really understood the concepts/lessons taught in their classrooms or are they just learning by rote memorization?
- 4) Are they able to easily use their learning in their everyday life/situations?
- 5) How necessary or unnecessary does/can parental, teachers, and others care/supervision help in the child's classroom achievements?

2.2 Problem

Looking at the above literatures, the study will seek to address the various issues complementing as well as complicating the various theories and findings of educational research. The problems the researcher will be seeking to find out are given as follows:

- Whether English medium schools are more superior to the mother tongue medium schools where the quality of schooling, the socio-economic status and other characteristic differences in the students are controlled for.
- The nature of the school achievement in subjects like Environmental Science, Mathematics, and other languages across the three types of schools.
- Whether English medium schooling have an additive or subtractive effect on the mother tongue.

2.3 Hypotheses

On the basis of the review of literature and the analysis on the nature of relationship between the mother tongue and school learning, the hypotheses are given as below:

- The classroom achievement of children in Mother tongue school (Sema), Community language school (Nagamese) and English medium school will show significant differences.
- Teaching the mother tongue medium children (Sema in school as well as home) and Community language medium school (Nagamese in school but Kachari at home) through English medium will have a subtractive effect on the development of the mother tongue competence.
- There will be significant differences between children from the English medium school, the Mother Tongue medium school and Community language medium school in their level of understanding and conceptual development in school subjects.
- The Basic Interpersonal Communication Skill (BICS) and Cognitive and Academic Language Proficiency (CALP) of mother tongue medium, community language medium and English medium school children will vary significantly.

CHAPTER 3

Methods

3.1 Research Design

3.2 Tools

3.3 Sample

3.4 Procedure

Chapter 3

3.1 Research Design

The present study used a 3 (Medium of Instructions) x 2 (Grades) factorial design in which children from two classes i.e. Class III and Class IV of Mother Tongue medium, Community Language medium and English medium schools were assessed for different aspects of school related achievements. All the three schools were matched for quality of schooling. The children in these three schools were also matched for their socio-economic status, age group and the educational qualifications of their parents.

3.2 Tools

Index of Quality of Schooling

The Index of Quality of Schooling developed by Department of Education, Kohima, Nagaland for the purpose of categorizing the schools according to the available facilities in the school was used for matching the schools. The schools were categorized according to the facilities and infrastructures available in and around schools. They were evaluated broadly on physical, organizational and cognitive aspects. The classroom environment, school environment, attendance records, school and community participation, text books, library, funds, evaluation of learners, classroom process etc were some specific features which were considered while evaluating the schools. Schools were scored according to the information available from the respective school authorities. The maximum score of the index was 150 marks and the schools were categorized according to the marks obtained. The schools selected for this study scored between 70 to 80 marks which belong to the low category schools. The rationale for taking the low category English medium school was to make it methodologically comparable with the Sema and Nagamese medium schools.

Test of Environmental Science (EVS)

The test for EVS was constructed by the researcher along with two faculty members of Zakir Hussain Centre of Educational Studies, Jawaharlal Nehru University, New Delhi by matching the prescribed syllabus of EVS of all the three medium of schools (English, Sema and Nagamese medium). The pattern of questions of class tests of each school were also referred for the construction of the tests.

The test consisted of ten questions for both Class III and Class IV. The questions were of two marks each. The children were given one hour to finish answering the test. For every right answer a score of two was given and for every non-grammatical but correct answer, a score of one was given. For every wrong answer, a score of zero was awarded. The maximum scores for the test of EVS in both Class III and Class IV were 20 marks.

The themes used in the test of EVS for Class III included items such as,

- Plants and animals
- Food and food habits
- Seasons and weather
- Cleanliness
- Sense and sense organs
- National Holidays

The test for Class IV included items which dealt with basic knowledge about,

- Food and food habits
- Living things and non-living things
- Solar system
- Our land and people
- Different types of Soils
- Directions
- Agencies and its usefulness
- Means of communications

The themes for the tests were taken from the respective syllabi in Sema, Nagamese and English medium schools of Class III and Class IV. The tests included items such as descriptive questions, objective type, memory based questions, straight text paraphrase questions, general awareness questions, etc. The questions dealt with the simple knowledge of the child's everyday life situations to a more meta-cognitive understanding, analysis or synthesis, evaluation, inference etc. These questions assessed the level of achievement of children in this subject.

Test of Mathematics

The test for mathematics was constructed by the researcher along with two faculty members of Zakir Hussain Centre of Educational Studies, Jawaharlal Nehru University, New Delhi by matching the prescribed syllabus of the three medium schools. The pattern of questions of class tests of each school were also referred for the construction of the tests.

The test consisted of ten questions for both Class III and Class IV. The questions were of two marks each. The children were given one hour to finish answering the test. The pattern of score was the same as the pattern of score for the test of EVS. For every right answer a score of two was given and for every 'correct but incomplete' answer, a score of one was given. For every wrong answer, a score of zero was awarded. The maximum scores for the test of Mathematics in both Class III and Class IV were 20 marks.

The mathematics test items for both Class III and Class IV consisted of simple understanding of the child's everyday life operations in areas such as

- Addition
- Subtraction
- Multiplication
- Division
- Geometrical patterns
- Measures of Money and time
- Number Patterns and order
- Weights and Measures etc

The tests items were of descriptive questions, straight text questions, memory questions, general awareness questions, etc.

Oral Reading Test

The tests for Oral Reading Test was constructed by the researcher along with two faculty members of Zakir Hussain Centre of Educational Studies, Jawaharlal Nehru University, New Delhi by matching the prescribed syllabus of the three medium schools. The pattern of questions of class tests of each school were also referred for the construction of the tests.

The tests items included sentences in Sema and Nagamese language. The sentences were constructed using the prescribed text books and from everyday communications for Nagamese. The main aim of this test was to assess the level of competency of children in Sema and Nagamese language. It measured the reading ability i.e. the linguistic skills relevant for academic progress like pronunciations, of the children in their mother tongue or the medium of instruction.

For both Class III and Class IV, eight sentences were given for loud oral reading. Children were instructed to read the sentences loud and clear. If at any point of their reading they felt that they had committed a mistake, they were allowed to correct their sentences.

Each sentence carried two marks. For every word either 'mispronounced or substituted' for another word or 'repeated or omitted', an error of one was marked. The total score for the entire test was 16 marks. There was no time limit for the test.

Reading Comprehension Test

The tests for Reading Comprehension Test were constructed by the researcher along with two faculty members of Zakir Hussain Centre of Educational Studies, Jawaharlal Nehru University, New Delhi. The prescribed syllabus of the three medium

schools i.e. Sema, Nagamese and English were matched. The pattern of questions of class tests of each school were also referred for the construction of the tests.

The aim of this test was to measure skills relating to the reading comprehension of the children. The tests for the two classes consisted of two small passages or stories in Sema and Nagamese. It was followed by five questions based on each of the passages or the stories.

In all the three classes, children were asked to read the passage carefully and afterwards answer the ten questions verbally which were based on the paragraph or the story.

For every correct answer, a score of one was marked. And for every wrong answer, a score of zero was marked. If there was any appropriate single word answers, it was accepted and a score of one was marked. The total score of the test was 10.

Individualized Test of Mathematical Ability

The tests for Individualized Test of Mathematical Ability were constructed by the researcher along with two faculty members of Zakir Hussain Centre of Educational Studies, Jawaharlal Nehru University, New Delhi. The prescribed syllabus of the three medium schools i.e. Sema, Nagamese and English were matched for preparing the questionnaires for this test. The pattern of questions of class tests of each school were also referred for the construction of the tests.

This test was aimed at measuring the basic level of understanding and conceptual skills of the child as opposed to rote and mechanical skills. Thus, children taking this test were assumed to have atleast some basic conceptual understanding of mathematics to answer the items. The test consisted of items of basic mathematical and geometrical concepts like:

- Concept of Length, Breadth and Height
- Concept of Measurement

- Concept of Triangle, Square and Rectangle
- Concept of unit Place and Tenth Place
- Flexibility in Handling Money

The test was administered individually to smaller samples of about 60 children randomly selected from the total sample i.e. English, Sema and Nagamese medium school children. Each item of the test was explained to the children with some demonstration. Whenever a child was unable to understand the questions in the language of the test, he or she was given instructions by the researcher in the language they were most comfortable speaking in. For some questions, the child was asked to respond verbally. But for some, they were asked to write it in paper.

For each 'correct and well-defined' answer, a score of 2 was marked. For each correct but 'not well-defined' answer, a score of 1 was marked. And for each 'wrong answer or no response', a score of zero was marked. The total score of the test for Class III was 25 marks, and for Class IV were 45 marks.

BICS and CALP Measures

The tests for BICS and CALP Measures were constructed by the researcher along with two faculty members of Zakir Hussain Centre of Educational Studies, Jawaharlal Nehru University, New Delhi. The prescribed syllabus of the three medium schools i.e. Sema, Nagamese and English were matched for preparing the questionnaires for this test. The pattern of questions of class tests of each school were also referred for the construction of the tests.

The measures of BICS and CALP were given to a smaller sample of 30 children who were randomly selected from the total sample. The children were administered three versions of BICS and CALP measures i.e. Sema, Nagamese and English tests. The tests were a combination of five sub-tests, namely, Conversational skill test, Expressive Vocabulary test, Picture Story narration test, Cloze test of reading and Meta-Linguistics

test. Each test was aimed at measuring the specific aspect of linguistic ability of the children and they were constructed as moving along a continuum of BICS and CALP measures. The Conversational and Expressive Vocabulary tests focused on BICS, the Picture Story narration test on both BICS and CALP, and the Cloze and Meta-Linguistics test focused on CALP.

The items for the three medium schools children were different for Expressive Vocabulary and Picture Story Tests i.e. the Sema and the English medium school children were given the same tests items while the Nagamese medium school children were given a different content item test.

The *conversational skill test* was context based. The children were asked simple day to day questions while the researcher conducted the other tests on them or while having a general talk with the children. The children did not know that the quality of their conversational responses were being analyzed and marked. They were asked questions like 'What did you have in the morning?', 'How many brothers/sisters do you have?', 'Do you have a favorite subject? If Yes or No, which one and why?', 'Do you like coming to school?', 'Do you get to study at home?' etc. The children gave their responses verbally in a context embedded situation in both their medium of instruction as well as in English. The main aim of this test was to assess the conversational skill of the children for all the three medium of languages.

Though there were no fixed criteria for the amount of questions that were being asked, if the children gave a 'correct, detailed and grammatical' response, they were given a score of two. For 'ungrammatical or single word correct response', they were given a score of one. And for no response, they were scored a zero (Table 1.1). The total score for this test was 20 marks.

Response	Score
Correct Detailed Grammatical	2
Correct Ungrammatical Single word	1
No Response	0

Table 1.1: Scale for Conversational Skill test

In the *Expressive vocabulary* tests, the children were shown a picture of a village setting (for English test) and a town setting (for Sema and Nagamese test). When the children had thoroughly seen the pictures shown to them, they were asked to identify the objects, events, and actions happening in the pictures verbally. The children were also asked to express themselves beyond the pictures shown to them. The aim of this test was to measure the children's vocabulary for all three medium school children.

For every 'correct, detailed and grammatical' response, a score of one was given. For every 'ungrammatical or single word' response, they were marked 'zero' (Table 1.2). The total score for this test was 35 marks.

Response	Score
Correct Detailed Grammatical	1
Correct Ungrammatical Single word	0

Table 1.2: Scale for Expressive vocabulary Test skills

In the *Picture Story Narration* tests, the children in English, Sema and Nagamese medium schools were shown six picture series of two different stories. For the Sema and Nagamese tests the picture series were the same while for the English test, the picture series were different. These children were informed that the picture series tells a story and were asked to narrate a story accordingly. After the children had finished narrating the story, they were asked two open ended questions based on the pictures. This was done to elicit their age appropriate command over the grammatical structure of language. Thus, this test was aimed to assess the children's language use skills in a formal and narrative context. The total scores for this test were 35 marks.

For every 'correct, elaborately narrated and grammatical' response, a score of three was given. For every 'ungrammatical or single word' response, they were marked two. For every 'wrong' answer they were scored one. And for no response, a score of zero was marked (Table 1.3). The total score for this test was 35 marks.

In the *Cloze test*, the children were given two passages – one, a story and the other a non-story. Some key words were deliberately deleted from the passages and were given

at the bottom of each passage along with an extra word which acted as a distracter word. The children were asked to choose the right words and fill up the blanks of the passages.

This test was aimed to assess the reading level of a child i.e. the cognitive academic language proficiency of the children in the form of reading as a specific classroom related activity (Table 1.4).

For each correct response, a score of 1 was marked. The total score was 10 marks.

Response	Score
Correct Elaborate Grammatical	3
Correct Ungrammatical Single word	2
Wrong	1
No response	0

Table 1.3: Scale for Picture story narration measures

Response	Score
Correct	1
Wrong or No response	0

Table 1.4: Scale for Conversational Skill Test

The *Meta-Linguistics tests* contained four sub-tests, namely, Arbitrariness of language task, Definitional Skills items, Simple Conversational items, and Word Correction items tests. These tests were given to a smaller sample of 30 children who were randomly selected from the total sample. Each test was aimed at assessing the child's meta-linguistic skills and was administered to Sema, Nagamese and English medium school children in both the classes III and IV in their preferred language. Thus, the Sema and English medium school children were given the tests in Sema language while the children in Nagamese medium were given tests in Nagamese language. The tests given to these children were mostly in the form of games and stories.

In the *Arbitrariness of language task*, the children were given three 'game based item tests'. The aim of these tests were to see whether the children have understood that inter-changing the names of the objects shown to them does not change the properties of the object.

For the first test, the children were shown two pictures – one of a cat and the other a dog. They were instructed to look at the pictures carefully after which they were asked four questions. These questions were asked so that the child knows what each item in the pictures actually represents. After the children had responded to the questions being asked, the researcher instructed the child that they were going to play a game. They were told that for this game they were going to interchange the names of the objects shown to them in the pictures. After the names of the animals were interchanged, the children were asked four more questions. Each of their responses was recorded and was scored.

For the second test, the child was shown a toy aeroplane. The researcher then told the child that they were going to play a game. The same instruction for 'interchanging' of names of the objects with another was followed as above. After that, the researcher asked the children two questions.

For the third test, the children were asked two questions first, based on their basic understanding of everyday concepts on objects and things around them, namely, 'What do

you see in the sky during day time?', and 'What do you see in the sky during night time?'. Depending on the answers the children gave, they were further instructed to inter-change the names of the objects they had mentioned. Then they were asked three more questions and their responses were recorded and scored.

For every 'correct, grammatical and elaborate' response, a score of two was given. For every 'ungrammatical and unelaborated' response, they were marked one. And for wrong or no response, a score of zero was marked (Table 1.5). The total score for this test was 32 marks.

The *Definitional skill test* was a 'story based item test' aimed to assess the children's use of language in defining abstract objects. It assessed the children's ability in forming or giving meanings to an object which is not necessarily tied to a 'word referent'.

For this test the children were first showed a toy bird and the researcher told the children that it was a 'fairy bird'. Then the children were narrated a simple story based on the 'fairy bird'. The story contained three 'distinct' words that described and defined the fairy bird, namely, 'green-colored bird', 'two wings of different colors', and 'invisible'. After the story was narrated, the children were asked to define the 'fairy bird' in their own words. Further, they were asked one more question. After the children had responded, the researcher removed the toy bird from the children's view. Then, they were asked one more question and their responses were recorded and scored.

For every 'correct, well-defined grammatical' answers, a score of two was marked. For every 'correct but not well-defined grammatical' answer, a score of one was marked. And for every 'wrong answer or no response', a score of zero was marked. The total score for this test was six marks.

The *Simple conversational item test* had two story item tests and was aimed to assess the logical structure of words and sentences as understood by the child. Thus, it assessed the correct and the incorrect way of the children's conversational skills.

In both the story items, the children in all three medium of schools were narrated a short story which were followed by some illogical questions or statements. This questions or statements were asked and made with the assumption that the persons involved already knows about the incident. Then, based on the stories narrated to the children, the researcher asked the children two and three questions under each test items. Their responses were recorded and scored.

For every 'correct and logical' response, a score of two was marked. For 'wrong or illogical' response, a score of one was marked. And for 'no response', a score of zero was marked. The maximum score for this test was ten marks.

The *Word correction item test* was a story based item test which was aimed to assess the children's meta-linguistic or the meta-cognitive language skills.

In the test, the children in Sema, Nagamese and English medium schools were narrated a short story by the researcher. Then the children were told to imagine that the two birds in the story were now talking and five sentences the birds were speaking were going to be read out to them by the researcher. The children were also told that some of the sentences are correct and some are incorrect ungrammatical sentences. The children were instructed to listen to the sentences carefully and then repeat the wrong sentences being read out to them with appropriate corrections. The children's responses were recorded and then scored.

For every 'correct' response, a score of two was marked. For every 'incorrect' response a score of one was marked. And for every 'no response' a score of zero was marked. The total scores for this test were ten marks.

Response	Score
Correct Elaborate Grammatical	2
Correct Ungrammatical Unelaborated	1
Wrong No Response	0

Table 1.5: Scale for Meta-Linguistics tests

3.3 Sample

The study was conducted in the semi-urban areas of Zunheboto district and Dimapur district of Nagaland. While Zunheboto is ancestral land area of the Sema Naga tribe, Dimapur has a varied mixture of tribal and non-tribal living here. As it has been discussed in the previous chapters, education in Nagaland primarily means education through the English medium. Even the so called mother tongue schools conduct their schooling through 'Passive and active media' and also through the system of 'Multi-tier media' (Khubchandani, 1978, p.379). As prevalently observed in almost every state of India as well as globally, in Nagaland too education through the English medium is seen as more advantageous in the children's future even if that means over-looking the quality of the English medium schools. In 2006, there were about 1468 primary schools in Nagaland out of which 151 schools (Government and Private) were in Zunheboto district and 203 schools (Government and Private) were in Dimapur district. During the past one decade,

the state has witnessed the private English medium schools in Nagaland rapidly increase. The fees charged by these prestigious English medium schools are approximately much higher per month plus annual admission fees and others. The low quality English medium schools like the school taken for this study charge Rupees Two hundred rupees per month, plus proportionately lower annual admission and other charges.

The three schools selected for this study was done through purposive sampling where three Sema medium of instruction schools, two Nagamese and two English medium of instruction schools were taken. All the schools were scored on the index of quality of schooling. Then the three schools, one from each medium of instruction which had almost equal quality index of schooling were chosen for the study.

The sample of children consisted of 180 children from the Sema, Nagamese and English medium schools. Out of these, 60 were from each category of school with 30 students each in Class III and Class IV. The sample included 85 boys and 95 girls of Class III and Class IV. The number of boys in Sema, Nagamese and English medium of instruction schools were 23, 33 and 19 while the numbers of girls were 37, 27 and 31 respectively. The sample for Class III Sema medium of instruction school consisted of 14 boys and 16 girls. The sample for Class III Nagamese medium of instruction consisted of 19 boys and 11 girls. The sample for Class III English medium of instruction consisted of 16 boys and 14 girls. The sample for Class IV Sema medium of instruction school consisted of 9 boys and 21 girls. The sample for Class IV Nagamese medium of instruction consisted of 14 boys and 16 girls. The sample for Class IV English medium of instruction consisted of 13 boys and 17 girls. The age of the children ranged between 8 to 11 years. The mother tongue of the children in Sema and English medium schools was the Sema language while for the Nagamese medium of instruction it had a mixture of Kachari, Bangla and other language speakers. All the children in the Sema, Nagamese and English medium schools were speakers of Nagamese i.e. the lingua-franca of Nagaland.

The socio-economic status (SES) of the children in this study was controlled on the basis of certain socio-demographic variables like the educational qualifications of parents and the parental income per month. The children in all the three schools taken for this

study belonged to the low SES group where the range of parental income was between Rupees One thousand five hundred to Rupees Three thousand per month.

The educational qualifications of the parents of all the children were also controlled. The fathers' educational qualification ranged from Matriculation to Graduation while the mothers' educational qualification ranged between Class VIII to intermediate (+2). All the children from these schools belonged to areas with little geographical and cultural differences.

For the Individual Test on mathematical ability, BICS and CALP and the Meta-linguistics test, a smaller sub-sample was taken for more elaborate, in-depth assessment in one-to-one situation. For the Individual test of mathematical ability, 60 children were selected randomly from the total sample. Out of these 60 children, 28 were boys and 32 were girls. For BICS and CALP measures and Meta-linguistic tests 30 children were selected randomly from the entire sample. Out of these 30 children, 17 were boys and 13 were girls. The age range of this small sample group for Individual Test on mathematical ability, BICS and CALP and the Meta-linguistics test was between 7-10 years.

3.4 Procedure

Information on the quality of schooling index was personally collected from the Headmasters/Principals of schools and the Department of Education, Government of Nagaland, Kohima. The schools were matched for the quality of schooling. Among the schools selected, the schools which scored between 70 to 80 marks were selected for the study. All necessary permissions to conduct research in the school premises were taken from the respective Headmasters during the researcher's first ethnographic study trip and also during the second field trip for the actual study. Permission to conduct the testing methods on the children was also taken from the school authorities as well as parents. Also the information regarding the socio-economic status of the children and parental education were obtained from the respective school records.

During the researcher's first ethnographic field trip to these respective schools, the researcher spent a week each in establishing rapport with the children as well as the teachers and the administration of these schools. Thus, during her second trip to these schools for the study, the children as well as teachers and the administration were familiar with the researcher. However, the researcher began her tests only on the second day. The tests were administered to each child in two sessions. The two sessions were spread over the morning session and the afternoon session to avoid getting the children bored and fatigued. For the individual tests, special permission was sought and obtained from the respective school authorities. A separate room was used for the individual tests. Before administering any tests the researcher spent some time talking with these children informally. The children were also allowed to speak to the researcher and ask her questions freely. After that the children were informed that they were going to be given some test and therefore have to do their best. They were all given proper instructions with examples before the tests were actually conducted on them. It was necessary that these children on whom the tests were being conducted on have understood the instructions. Therefore, the researcher gave instructions, in their preferred medium of instruction, to those children who had not understood the questions properly.

CHAPTER 4

4.1 Result and Analysis

4.2 Analysis and findings of tests to Sema, Nagamese and English Medium children in their respective medium of instruction

4.3 Test of Science

4.4 Test of Mathematics

4.5 Oral Reading Test

4.6 Reading Comprehension Test

4.7 Individualized Test of Mathematical Ability

4.8 BICS and CALP Measures

4.9 Meta-Linguistic tests

Chapter 4

4.1 Result and Analysis

The objective of the present study was to examine the role of medium of instruction in classroom achievement of children in Class III and Class IV. It was to examine whether there will be significant differences between children from the English medium, Mother Tongue (Sema) medium and the Community language (Nagamese) medium schools in their level of understanding and conceptual development in school subjects where the quality of schooling, the socio-economic status and other characteristic differences in the students are controlled for. Thirty children from Class III and Class IV in Sema, Nagamese and English medium schools each were administered the tests of Environmental Science (EVS), Mathematics, Oral reading test (ORT) in Sema and Nagamese, and Reading Comprehension test (RCT) in Sema and Nagamese. The scores obtained from Sema, Nagamese and English medium school children were then compared to measure their classroom achievement levels in the above subjects.

A smaller sample of ten school children from Class III and Class IV of Sema, Nagamese and English medium schools each were then chosen randomly and were administered individually the test on mathematical understanding. This test was given according to their medium of instruction in school.

Further, the sample size was again reduced to five each from Sema, Nagamese and English medium schools in Class three and Class four for the language skills measures of BICS and CALP and on meta-linguistic measures. These tests were given in English as well as in their medium of instruction.

The findings were in conformity with the hypotheses formulated i.e. children of mother tongue medium school performed better than the children of English medium school in all tests except for the test of EVS and the English version test of BICS and CALP. It found that there were significant differences in the level of understanding and conceptual development in school subjects of children in Mother tongue school (Sema),

Community language school (Nagamese) and English medium school. The findings also showed that teaching of mother tongue in early schooling has an additive affect on the children's mother tongue competence.

The study's findings are described in detailed in the following sections. The first section compares the performance of children in Sema, Nagamese and English medium on EVS, Mathematics, Oral Reading Test (ORT) and Reading Comprehension Test (RCT) in their respective medium of instruction.

4.2 Analysis and findings of tests to Sema, Nagamese and English Medium children in their respective medium of instruction

The mean scores of tests on EVS, Mathematics, ORT and RCT administered to Sema, Nagamese and English medium children of Class III and Class IV in their respective medium of instruction are compared in Tables 4.1 and 4.2. The performance of the mother tongue school children were observed to be better than the English medium school children except in Class III and Class IV test of EVS where the English medium school children performed better than the Nagamese medium school children and the Sema medium school children. The English medium school children came second in both Class III and Class IV performance of EVS. However, looking at the overall findings, we can say that the mother tongue medium school children performed better than the English medium school children. The mean scores were analyzed in 3(medium of instruction) x 2 (Classes) ANOVA for each of the variables. A summary of all the ANOVA is given in Tables 4.10 - 4.13. The result showed that the effect for the medium of instruction (MI) was not significant for EVS, but was significant for Mathematics, Oral Reading Test and Reading comprehension Test. The Grade effect was found to be significant for EVS, Mathematics, and Oral Reading Test but not significant for Reading Comprehension Test. The interaction between the Medium of Instruction and Grade was found to be significant for test of EVS and Mathematics but not significant for Oral Reading Tests and Reading Comprehension Tests. Thus, the findings indicate that mother tongue as the medium of instruction has partly played a positive role in improving children's performance in the classroom.

4.3 Test of Science

The mean scores for EVS in Sema, Nagamese and English medium children in Class III were 12.47 ($SD=3.30$), 10.46 ($SD=2.8$), and 12.13 ($SD=3.54$) respectively. (Table 4.1) Thus, it showed that the performances of children in Class III were better for Sema medium than for the English and Nagamese medium of instruction respectively. The mean scores in Table 4.2 also showed that mean scores for EVS in Sema, Nagamese and English medium children in Class IV were 9.17 ($SD=1.93$), 11.2 ($SD=2.8$) and 10 ($SD=3.4$) respectively. Thus, we see that the performances of children in Nagamese medium were better than children in English and Sema medium school children. Looking at the two way analysis of variance at Table 10, the result showed that the effect for the medium of instruction (MI) was non-significant for EVS ($f=127$, $df=2$, $p>0.05$). However, the Grade effect was found to be significant ($f=11.971$, $df=1$, $p<0.05$). The interaction between the Medium of Instruction and Grade was also found to be significant ($f=7.004$, $df=2$, $p<0.05$). The mean scores are presented in the form of graph in figure 1 which shows a minimal gap between the MI groups in Class III and Class IV Nagamese school children than compared to the Sema and English medium school children in Class III and Class IV. The mean scores for Sema medium children (Class III and Class IV combined) was 10.82, Nagamese medium children (Class III and Class IV combined) was 10.83, and English medium children (Class III and Class IV combined) was 11.06. The main effect of Class was non-significant for the Nagamese medium school children. The Class III and Class IV Nagamese school children performed almost the same in the test of EVS. However, for the Sema and English medium school children the main effect of class showed significance. In both Sema and English schools, Class III children performed better than compared to Class IV children. The total means for Grade III and Grade IV children were 11.69 and 10.12 respectively. Thus, the findings show that in the test of EVS, there was not much difference in the performance of children in Sema, Nagamese and English medium of instruction.

The themes used in the test of EVS included items like plants and animals, food and food habits, seasons and weather, cleanliness, sense and sense organs, national

holidays, living things and non-living things, food and food habits, solar system, different types of soils, directions, our land and people, agencies and its usefulness, means of communications etc. The themes for the tests were taken from the respective syllabi in Sema, Nagamese and English medium schools of Class III and Class IV. Children were given descriptive questions where they had to answer the questions in writing; objective type questions where they had to tick mark the right answer from given choices; memory based questions; straight text paraphrase questions; general awareness questions; etc. The questions like “Why do animals not wear clothes?”, “Why is it necessary that we should keep our earth clean?”, “What kinds of food should we eat to stay healthy?”, Name any four tribes in Nagaland” etc dealt with the simple knowledge of the child’s everyday life situations to a more meta-cognitive understanding, analysis/synthesis, evaluation, inference etc. While answering the items it was found that children in Sema, Nagamese and English medium responded almost the same except for the Class IV children in Sema medium school who performed lower than the children in Nagamese and English medium schools while relating their school knowledge to home environment. The performance of English medium children on items measuring general awareness, ability to reason and skills to process information were almost as equal to the Sema and Nagamese medium school children.

4.4 Test of Mathematics

The mean scores in Table 4.1 showed that the performances of children in Class III were better for Sema medium and Nagamese medium than for the English respectively. Their mean scores of Mathematics were 13.8 ($SD=3.7$), 13.3 ($SD=3.4$), and 9.27 ($SD=3.78$) respectively. The mean scores in Table 4.2 also showed that in Class IV the performances of children in Sema and Nagamese medium were better than the children in English medium school. Their mean scores for Mathematics were 10.5 ($SD=3.47$), 13.4 ($SD=4.3$) and 6.93 ($SD=2.38$) respectively. Looking at Table 4.11, the two-way analysis of variance shows that for the Medium of Instruction the effect was significant ($f=35.627$, $df=2$, $p<0.05$). The effect of Grade was also found to be significant ($f=12.012$, $df = 1$, $p<0.05$). The interaction effect of Medium of instruction and Grade was also found to be

significant for the test of Mathematics ($f=3.612$, $df = 2, 174$, $p<0.05$). The mean scores are presented in the form of graph in figure 2 which shows a wider gap between the MI groups in Class III compared to Class IV except for the Nagamese medium school where the children in both Class III and Class IV have performed the almost the same. The mean scores for Sema medium children (Class III and Class IV combined) was 12.15, Nagamese medium children (Class III and Class IV combined) was 13.35, and English medium children (Class III and Class IV combined) was 8.1. The total means for all Grade III and Grade IV children were 12.12 and 10.28 respectively. Thus, the findings show that in the test of Mathematics, children in Sema and Nagamese medium of instruction have performed better than the English medium school children. The significant effects showed that children in Sema and Nagamese medium school performed better compared to the English medium school children.

The test items consisted of simple mathematical calculations like addition, subtraction, multiplication, division, number patterns, number order, measures of money, measures of time, weights and measures etc. The items in the test were grade appropriate i.e. for both Class III and Class IV of all the three schools the question pattern and prescribed syllabus of Mathematics were matched. The results as is seen from the scores obtained shows that children in Sema and Nagamese medium schools have better mathematical understanding and mathematical problem solving skills as compared to children in the English medium schools. The children had little difficulty in understanding the mathematical terms given to them in their medium of instruction. The differences of performances clearly showed that the Sema and Nagamese medium school children were able to understand and analyze mathematical concepts better than the English medium school children.

4.5 Oral Reading Test

The mean scores for the Oral Reading Test in Class III for Sema, Nagamese and English medium school children were 8.2 ($SD=2.53$), 9.3 ($SD=2.18$) and 6.17 ($SD=2.27$) respectively (Table 4.1). The mean scores for Oral Reading Test in Class IV for Sema, Nagamese and English medium school children were 9.17 ($SD=1.93$), 10.07 ($SD=2.47$)

and 8.13 ($SD=2.1$) respectively (Table 4.2). Looking at Table 4.12, the two way analysis of variance show that for this tests the effect of Medium of Instruction (MI) was significant ($f=18.912$, $df=2$, $p<0.05$). The effect of Grade was also found to be significant ($f=13.252$, $df=1$, $p<0.05$). However, the interaction effect of Medium of Instruction and Grade was non-significant ($f=1.2$, $df=2$, $p>0.05$). The mean scores are presented in the form of graph in figure 3 which shows little gap between the MI groups in Class III compared to Class IV except for Class III children in English medium school. The mean scores for Sema medium children (Class III and Class IV combined) was 8.7, Nagamese medium children (Class III and Class IV combined) was 9.7, and English medium children (Class III and Class IV combined) was 7.1. The total means for all Grade III and Grade IV children were 7.8 and 9.1 respectively. Thus, the findings show that in the Oral Reading Test, children in Sema and Nagamese English medium of instruction performed better than the English medium children. The overall significant effects also showed the better performance of Sema and Nagamese medium school children over the English medium school children. However, there was no significant difference in the performance of children when the effect of Medium of Instruction and Grade was taken into consideration.

The main aim of this test was to access the decoding skills i.e. the linguistic skills relevant for academic progress like pronunciations, of the children in Sema and Nagamese language. The reading ability shows one's level of competency in the language. The children in Sema and English medium schools were given eight sentences to read out loud in Sema language while the children in Nagamese medium were given eight sentences to read out loud in Nagamese language. The sentences were constructed according to their grade level using the prescribed text books and from everyday communications for Nagamese. The findings show that the Sema and Nagamese school children performed better than the English medium school children in both Classes III and IV. Thus, it showed that the English medium school children's performance in the oral reading test is an indication of their inadequate exposure to the language in the classroom context.

4.6 Reading Comprehension Test

The mean scores for Sema, Nagamese and English medium children in Class III for Reading Comprehension were 6.17 ($SD=1.44$), 5.8 ($SD=1.45$) and 5.4 ($SD=1.42$) respectively (Table 4.1). The mean scores for Reading Comprehension Test in Class IV for Sema, Nagamese and English medium school children were 5.9 ($SD=1.32$), 6.03 ($SD=1.06$) and 5.3 ($SD=1.51$) respectively (Table 4.2). Looking at Table 4.13, the two way analysis of variance show that the effect of Medium of Instruction was significant ($f=4.004$, $df=2$, $p<0.05$). However, the effect of Grade was found to be non-significant ($f=0.026$, $df=1$, $p>0.05$). The effect of Medium of Instruction and Grade was also found to be non-significant ($f=0.5$, $df=2$, $p>0.05$). The mean scores are presented in the form of graph in figure 4 which shows little gap between the MI groups in Class III compared to Class IV. The total mean scores for Sema, Nagamese and English medium schools (Grade III and Grade IV combined) were 6.04, 5.9 and 5.3 respectively. The total mean scores for Class III and Class IV (Sema, Nagamese and English combined) were 5.79 and 5.71 respectively. However, from the figure we see that children in Sema and Nagamese medium have performed better than the English medium school children. Thus, the findings show that in the Reading Comprehension Test, children in Sema and Nagamese medium of instruction have performed better than the English medium school children.

The aim of this test was to measure skills relating to the reading comprehension of the children. Sema language is taught as a language subject in the English medium school. Thus, the children in Sema and English medium school were given two Sema passages/stories to read. The Nagamese school children were given two passages/stories in Nagamese to read. All of the three medium school children were instructed to answer the ten questions (total) given at the bottom of the given passage/stories verbally. The findings showed that the children in Sema and Nagamese medium have performed better than the English medium school children. This showed that the Sema language which was being taught as a language in the English medium school was not helping the children to perform better in reading the Sema language. It proves that using the mother tongue as a school subject other than as a medium of instruction has no effect in promoting adequate language skills in that particular language. The poor performance of the English medium school children compared with the Sema and Nagamese medium school children showed that the mother tongue was being given the least importance while they were taught in English and

thus, it had little effect on the children's reading comprehension. It also showed that the teaching of Sema as a language subject was having a subtractive effect on the learning of mother tongue in English medium schools.

Table 4.1: Mean and Standard Deviation (SD) scores of Class III in Sema, Nagamese and English medium children (N=30)

	Class III			
		SM	NM	EM
EVS Maximum -20	Mean	12.47	10.46	12.13
	SD	3.30	2.8	3.54
Mathematics Maximum – 20	Mean	13.8	13.3	9.27
	SD	3.7	3.4	3.78
Oral Reading Test	Mean	8.2	9.3	6.17
	SD	2.53	2.18	2.27
Reading Comprehension Test Maximum - 10	Mean	6.17	5.8	5.4
	SD	1.44	1.45	1.42

**Note: EVS: Environmental Science
SM: Sema Medium
NM: Nagamese Medium
EM: English Medium*

Table 4.2: Mean and Standard Deviation (SD) scores of Class IV in Sema, Nagamese and English medium children (N=30)

	Class IV			
		SM	NM	EM
EVS Maximum-20	Mean	9.17	11.2	10
	SD	1.93	2.8	3.4
Mathematics Maximum-20	Mean	10.5	13.4	6.93
	SD	3.47	4.3	2.38
Oral Reading Test	Mean	9.17	10.07	8.13
	SD	1.93	2.47	2.1
Reading Comprehension Test Maximum - 10	Mean	5.9	6.03	5.3
	SD	1.32	1.06	1.51

**Note: EVS: Environmental Science
SM: Sema Medium
NM: Nagamese Medium
EM: English Medium*

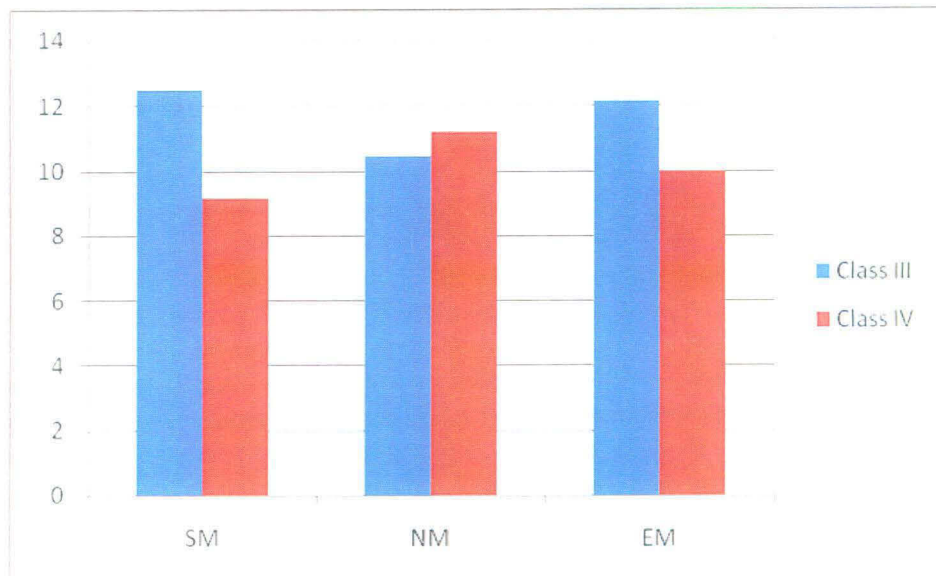


Figure 1: Class III and Class IV MI for EVS Score

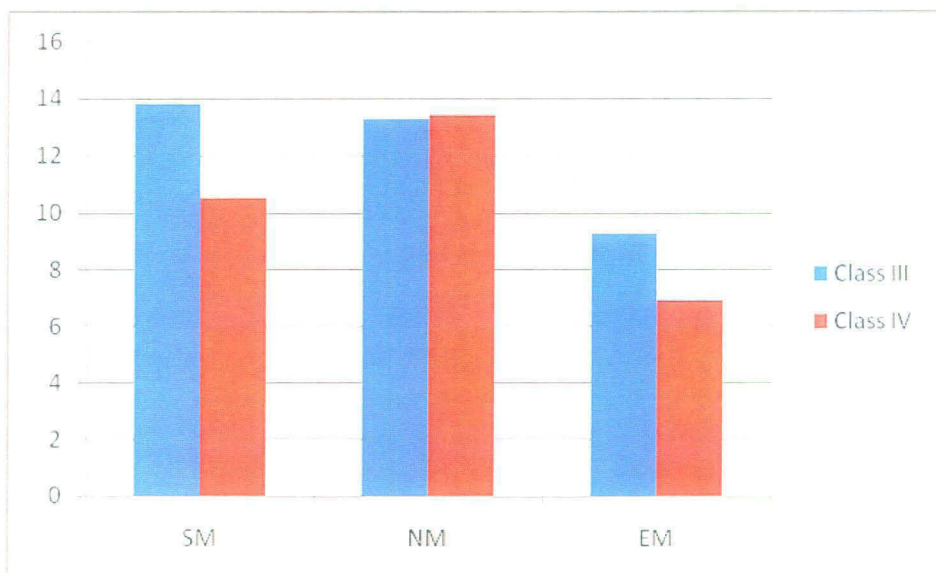


Figure 2: Class III and Class IV MI for Mathematics score

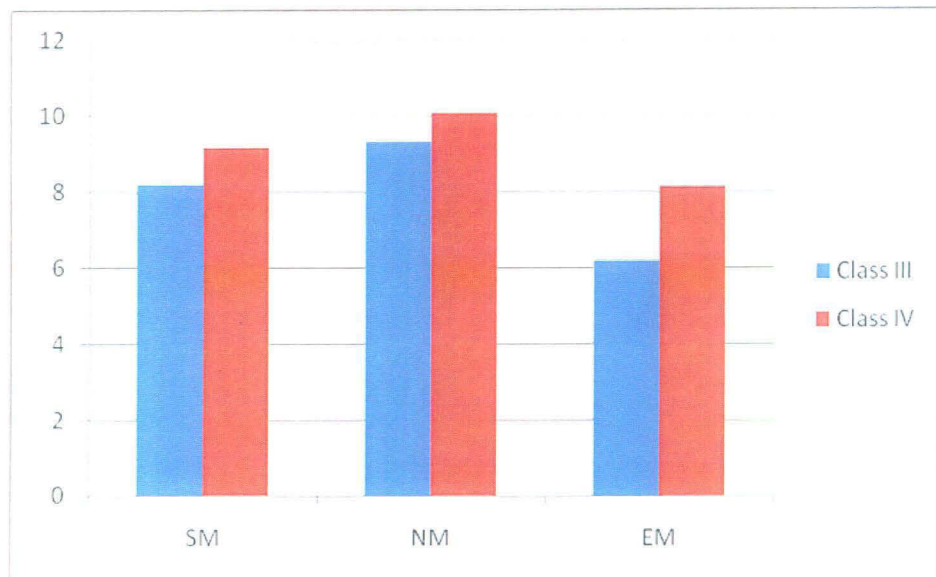


Figure 3: Class III and Class IV MI for ORT

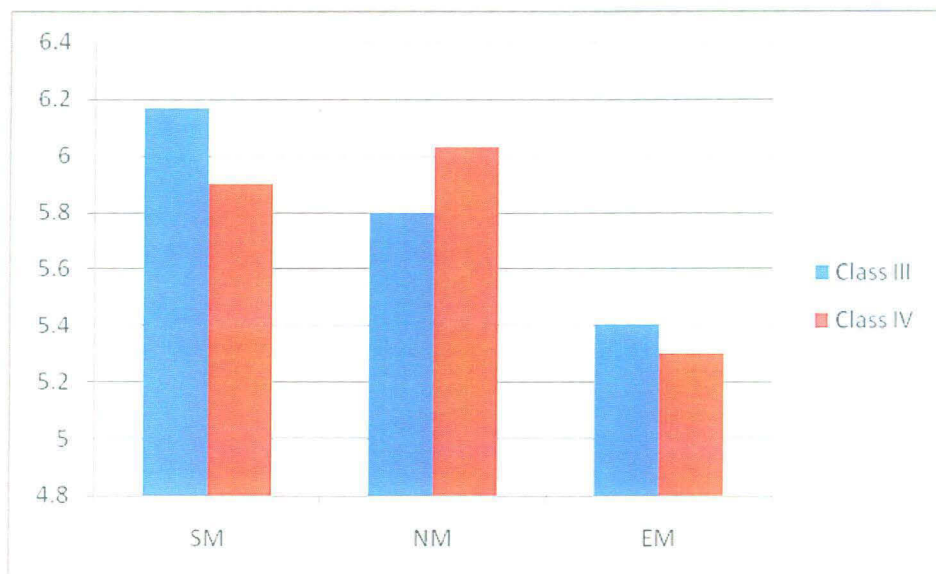


Figure 4: Class III and Class IV MI for RCT

4.7 Individualized Test of Mathematical Ability

The Individualized Test of Mathematical Ability was administered to a smaller sample of 60 children who were randomly selected from the total sample. The mean scores (Table 4.3) for Sema, Nagamese and English medium school children in Class III were 16.4 ($SD=3.9$), 17.2 ($SD=4.13$) and 13.9 ($SD=3.67$) respectively. The mean scores for Sema, Nagamese and English medium school children in Class IV were 30.6 ($SD=4.2$), 32.1 ($SD=7.5$) and 17.4 ($SD=3.95$) respectively. Further, the scores were analyzed for each medium of instruction differently using the Mann Whitney U test. The results showed that the children in Sema ($U=0$, $W= 55$, $p<0.05$) and Nagamese medium ($U=4.5$, $W=59.5$, $p<0.05$) performed significantly better than English Medium school children ($U=26.5$, $W =81.5$, $p <0.05$). (See Table 4.14)

This test was aimed at measuring the understanding level of the children on basic mathematical concepts. Thus, children taking this test were assumed to have atleast some basic conceptual understanding of mathematics to answer the items. The tests consist of items of mathematical and geometric concepts which were prescribed in their syllabi of mathematics. Each item in the test was explained to the children with some demonstration in their respective medium of instruction. However, while administrating the test, it was found that the children in Class IV English medium school had difficulty in understanding the questions asked in English. Therefore, in such cases, the researcher used the child's mother tongue to instruct them. For some questions, the children were asked to give their responses verbally, while for some questions they were required to work out the sums manually in a paper. For example, questions like, "Look at this classroom carefully and identify the length and the breadth of the classroom," "Look at these pictures - a square and a rectangle with little difference between them and a triangle- and identify which one is a square, which one a rectangle and which one is a triangle?" etc the children were required to give verbal responses.

The findings showed that Class III children in Sema and Nagamese medium school have performed better than the English medium school children. In Class IV too, the

children in Sema and Nagamese medium had outperformed the children in English medium school. Thus, the process of learning was found to be negatively affected by a medium other than their mother tongue for the English medium school children. As children pay more attention to the language for better understanding levels in respective subjects, the learning here as is seen becomes poor. The children were found to be performing not through their basic understanding of mathematical concepts but they were working on the sums more mechanically.

Table 4.3: Mean and Standard Deviation of Class III and Class IV children in Sema, Nagamese and English medium schools in Individual Test of Mathematical ability

		SM	NM	EM
Class III	Mean	16.4	17.2	13.9
	SD	3.9	4.13	3.67
Class IV	Mean	30.6	32.1	17.4
	SD	4.2	7.5	3.95

*Note: *SM: Sema Medium*
NM: Nagamese Medium
EM: English Medium

	Test Statistics		
	SM	NM	EM
Mann-Whitney U	0	4.5	26.5
Wilcoxon W	55	59.5	81.5
Z	-3.788	-3.455	-1.785
Asymp. Sig. (2-tailed)	0	0.001	0.074

Table 4.14: Mann Whitney U Test Scores for Class III and Class IV Sema, Nagamese and English medium

4.8 BICS and CALP Measures

The measures of BICS and CALP were given to a smaller sample of 30 children who were randomly selected from the total sample. The children were administered three versions of BICS and CALP measures i.e. Sema, Nagamese and English. The Mean scores and Standard deviation obtained from the tests are given in Table 4.4, 4.5, 4.6, 4.7, 4.8 and 4.9. The mean scores of Class III and Class IV children in BICS and CALP measures (Sema and Nagamese) showed that the Sema and Nagamese medium children have performed better compared to the children in English medium school.

The test were a combination of five sub-tests, namely, Conversational skill test, Expressive Vocabulary test, Picture Story narration test, Cloze test of reading and Meta-Linguistics test. Each test was aimed at measuring the specific aspect of linguistic ability of the children and they were constructed as moving along a continuum of BICS and CALP measures.

For the *Conversational Skill test*, the child was asked simple day to day conversation type questions, which were also context based as the researcher conducted the other tests on them. They were asked questions like ‘What did you have in the morning?’, ‘How many brothers/sisters do you have?’, ‘what subject do you like the most and why?’ etc. The children were asked to answer the questions verbally in both their medium of instruction as well as in English. This was done to assess the conversational skills of the children in both languages-Sema and English; Nagamese and English. The mean scores for children in Class III in Sema, Nagamese and English medium were 20 ($SD=0$), 19.6 ($SD=0.89$) and 18.4 ($SD=0.89$) respectively. The mean scores for children in Class IV in Sema, Nagamese and English medium were 20 ($SD=0$), 19 ($SD=2.23$) and 15 ($SD=2.45$) respectively. Thus, the findings showed that children of Class III and Class IV in Sema and Nagamese medium performed better in Sema and Nagamese test than compared to the children in English medium school respectively (Tables 4.6 and 4.7). However, children of Class III and Class IV in Sema and Nagamese medium did not perform better in the English version test. The mean scores of Class III children in Sema, Nagamese and English

schools were 12.6 ($SD=1.51$), 13.8 ($SD=4.91$), and 16.2 ($SD=1.30$) respectively. The mean scores of Class IV children in Sema, Nagamese and English schools were 11.6 ($SD=2.70$), 14.6 ($SD=2.97$) and 13.8 ($SD=3.4$) respectively (Tables 4.4 and 4.5).

The *Expressive Vocabulary test* was given to assess each child's vocabulary knowledge in Sema, Nagamese and English languages. All the children in Sema, Nagamese and English schools were shown pictures of a village setting (for English test) and a town setting (for Sema and Nagamese test). The children were then asked to identify the objects, events, and actions happening in the pictures verbally. The mean scores of Class III children in Sema, Nagamese and English schools were 27.6 ($SD=3.97$), 26 ($SD=6.6$), and 21.6 ($SD=2.7$) respectively. The mean scores of Class IV children in Sema, Nagamese and English schools were 27($SD=5.34$), 28 ($SD=5.5$) and 23.6 ($SD=4.04$) respectively (Tables 4.6 and 4.7). Thus, the findings show that children of Class III and Class IV in Sema and Nagamese medium performed better in Sema and Nagamese test than compared to the English medium school children. The table showed that the differences of performances between the Sema and Nagamese medium school children were much higher than English medium school children. Thus, we see that the English medium school children performed less well than the Sema and Nagamese medium school children because their knowledge of vocabulary was not very developed up to their grade level like the Sema and Nagamese school children. Looking at Tables 4.4 and 4.5, we see that the children of Class III and Class IV in Sema and Nagamese medium did not perform better in the English version test. The mean scores for children in Class III in Sema, Nagamese and English were 18 ($SD=2.12$), 20 ($SD=6.04$), and 23.2 ($SD=3.03$) respectively. The mean scores of Class IV children in Sema, Nagamese and English schools were 16.8 ($SD=3.03$), 17 ($SD=3.74$) and 24 ($SD=3.74$) respectively (Tables 4.4 and 4.5). The reasons for this are explained in the next chapter.

The *Picture Story Narration test* was given to the children to assess the children's language use skills in a formal and narrative context i.e. measure their age appropriate command over the grammatical structure of language. Six picture series of two different

stories – one for Sema and Nagamese tests and the other for the English test- were shown to children in Sema, Nagamese and English medium schools. They were informed that the picture series tells a story and were asked to narrate a story accordingly. After the narration was completed, the children were asked two open ended questions based on the pictures. This was done to elicit their age appropriate command over the grammatical structure of language. The mean scores for children in Class III in Sema, Nagamese and English were 31.4 ($SD=1.51$), 28 ($SD=6.8$), and 20.4 ($SD=1.51$) respectively. The mean scores of Class IV children in Sema, Nagamese and English schools were 31.8 ($SD=1.30$), 32 ($SD=1.41$) and 28.2 ($SD=4.60$) respectively (Tables 4.6 and 4.7). The findings show that children of Class III and Class IV in Sema and Nagamese medium performed better in Sema and Nagamese test than compared to the children in English medium school respectively. For Class IV children too, we see that children in Sema and Nagamese medium of instruction have performed better than the English medium school. This showed that the children in Sema and Nagamese medium school had better knowledge of rules of grammar which was developed up to their grade level. Looking at Tables 4.4 and 4.5, we see that children of Class III and Class IV in Sema and Nagamese medium did not perform better in the English version test. The mean scores for children in Class III in Sema, Nagamese and English were 16.4 ($SD=2.60$), 20.4 ($SD=1.51$), and 23.6 ($SD=2.60$) respectively. The mean scores of Class IV children in Sema, Nagamese and English schools were 11 ($SD=1.41$), 20.4 ($SD=1.81$) and 23.8 ($SD=3.19$) respectively (Tables 4.4 and 4.5). The differences in their performances were also found to be wide. The reasons for these findings have been explained in the next chapter.

Cloze Test of reading was given to the children to assess the children's level of reading i.e. the cognitive academic language proficiency of the children in the form of reading as a specific classroom related activity. The test had two passages – one, a story and the other a non-story. Some key words were deliberately deleted from the passages and were given at the bottom of each passage along with an extra word which acted as a distracter word. The children were asked to choose the right words and fill up the blanks of the passages. The mean scores for children in Class III in Sema, Nagamese and English were 6.8 ($SD=1.64$), 6.4 ($SD=0.54$), and 5.2 ($SD=1.09$) respectively. The mean scores of

Class IV children in Sema, Nagamese and English schools were 6 ($SD=1.41$), 5.6 ($SD=0.89$) and 5.6 ($SD=1.67$) respectively (Tables 4.6 and 4.7). Thus, the findings show that children of Class III and Class IV in Sema and Nagamese medium performed better in Sema and Nagamese test than compared to the children in English medium school respectively. We see that the differences of performances between the children in the three medium schools are wide. Looking at Tables 4.4 and 4.5, we see that children of Class III and Class IV in Sema and Nagamese medium have not performed well in the English version test. The mean scores for children in Class III in Sema, Nagamese and English were 4 ($SD=1.4$), 4.6 ($SD=1.81$), and 5.6 ($SD=1.67$) respectively. The mean scores of Class IV children in Sema, Nagamese and English schools were 4.4 ($SD=0.89$), 4 ($SD=0$) and 4.8 ($SD=1.01$) respectively (Tables 4.4 and 4.5). The differences in performance as we can see from the mean scores are wide between the Sema, Nagamese and the English medium of instruction groups. The reasons for these are explained in the following chapter.

Thus, from the above findings we see that there are significant difference in the performance of children in Sema, Nagamese and English medium schools. As the Sema and Nagamese medium children were taught in their respective mother tongue from the early years of education, their performances have revealed a wide difference as the researcher had attempted to test. The findings also showed that children in English medium school have performed better as compared to children in Sema and Nagamese medium school children in the English version Tests of BICS and CALP, except in Class IV where the Sema and Nagamese children have performed better. The mean scores of both Class III and Class IV in the tests of EVS, Mathematics, ORT, RCT and BICS and CALP are plotted in the form of graphs as shown in figures 1 to 8. The graph clearly shows that there are differences in performances of Sema, Nagamese and English medium school children in Sema, Nagamese and English Tests. As there has been an absence of support for the mother tongue in the setting of English medium school, the children have performed lower than the children in Sema and Nagamese medium school children in Sema and Nagamese tests. Thus, we see that learning of English during early schooling plays a subtractive role in the acquisition of mother tongue in English medium schools. Therefore, it can be said that as children acquire some proficiency in a second language (English) which is used as

the medium of instruction in their school, they lose their proficiency in their mother tongue as compared to the children in the mother tongue medium schools who are taught in their first language. Thus, we can see that English medium of instruction in early education does have a subtractive role on the development of mother tongue of children.

Table 4.4: Mean and Standard Deviation of Class III children in Sema, Nagamese and English medium on measures of BICS & CALP (English)

Medium of Instruction		Conversation	Expressive Vocabulary	Picture Story Narration	Cloze Test of Reading
SM	Mean	12.6	18	16.4	4
	SD	1.51	2.12	2.60	1.4
NM	Mean	13.8	20	20.4	4.6
	SD	4.91	6.04	1.51	1.81
EM	Mean	16.2	23.2	23.6	5.6
	SD	1.30	3.03	2.60	1.67

Table 4.5: Mean and Standard Deviation of Class IV children in Sema, Nagamese and English medium on measures of BICS & CALP (English)

Medium of Instruction		Conversation	Expressive Vocabulary	Picture Story Narration	Cloze Test of Reading
SM	Mean	11.6	16.8	11	4.4
	SD	2.70	3.03	1.41	0.89
NM	Mean	14.6	17	20.4	4
	SD	2.97	3.74	1.81	0
EM	Mean	13.8	24	23.8	4.8
	SD	3.4	3.74	3.19	1.01

Table 4.6: Mean and Standard Deviation of Class III children in Sema, Nagamese and English medium on measures of BICS & CALP (Sema and Nagamese)

Medium of Instruction		Conversation	Expressive Vocabulary	Picture Story Narration	Cloze Test of Reading
SM	Mean	20	27.6	31.4	6.8
	SD	0	3.97	1.51	1.64
NM	Mean	19.6	26	28	6.4
	SD	0.89	6.6	6.8	0.54
EM	Mean	18.4	21.6	20.4	5.2
	SD	0.89	2.7	1.51	1.09

Table 4.7: Mean and Standard Deviation of Class IV children in Sema, Nagamese and English medium on measures of BICS & CALP (Sema and Nagamese)

Medium of Instruction		Conversation	Expressive Vocabulary	Picture Story Narration	Cloze Test of Reading
SM	Mean	20	27	31.8	6
	SD	0	5.34	1.30	1.41
NM	Mean	19	28	32	5.6
	SD	2.23	5.5	1.41	0.89
EM	Mean	15	23.6	28.2	5.6
	SD	2.45	4.04	4.60	1.67

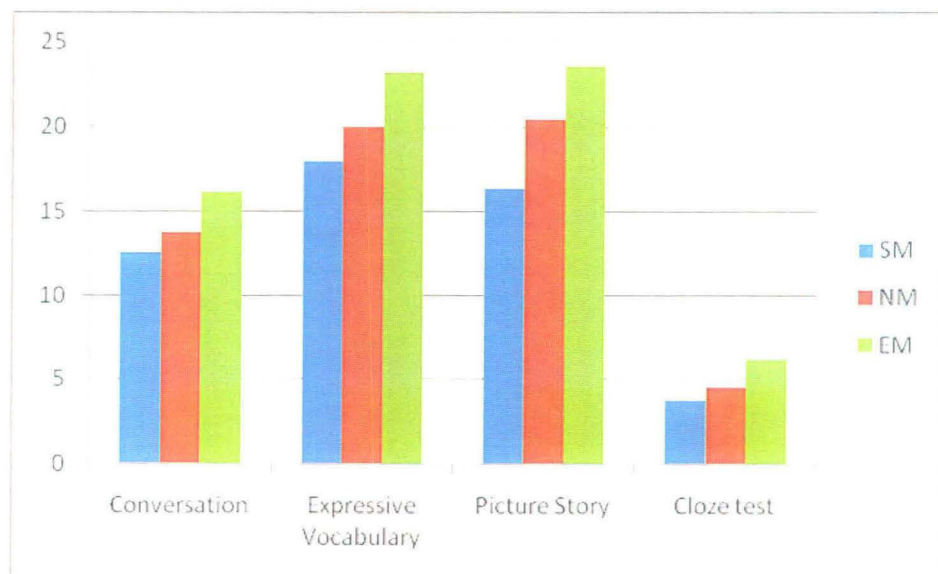


Figure 5: Performance of Class III on BICS and CALP (English)

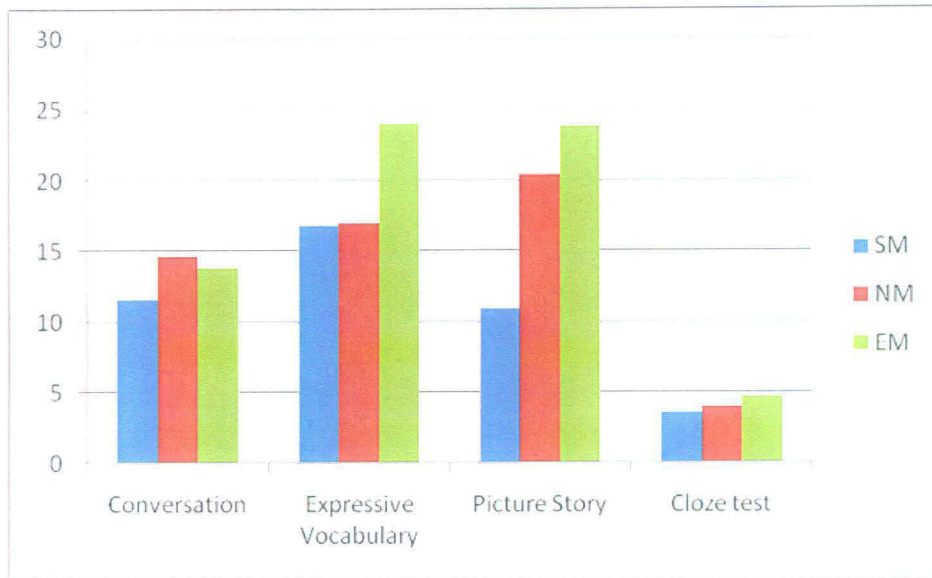


Figure 6: Performance of Class IV on BICS and CALP (English)

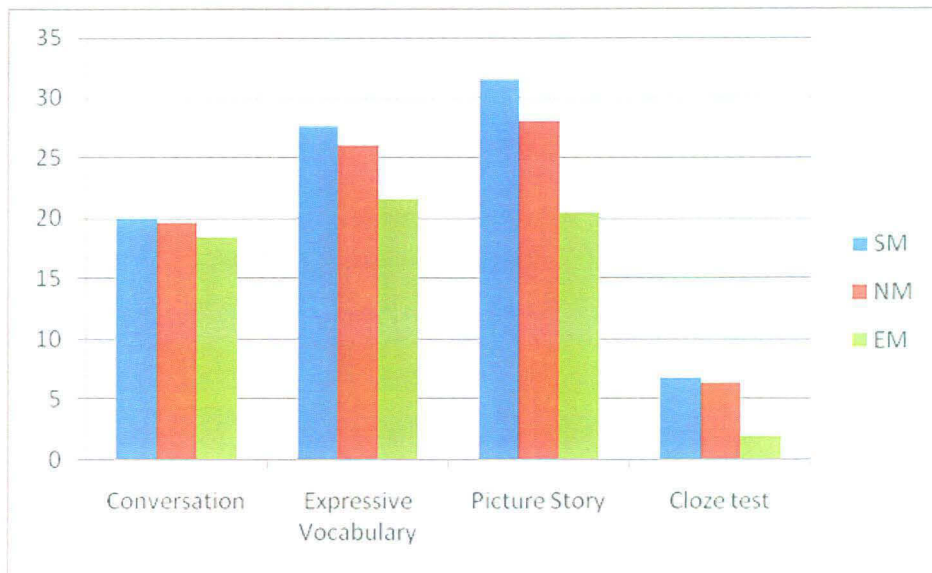


Figure 7: Performance of Class III on BICS and CALP (Sema and Nagamese)

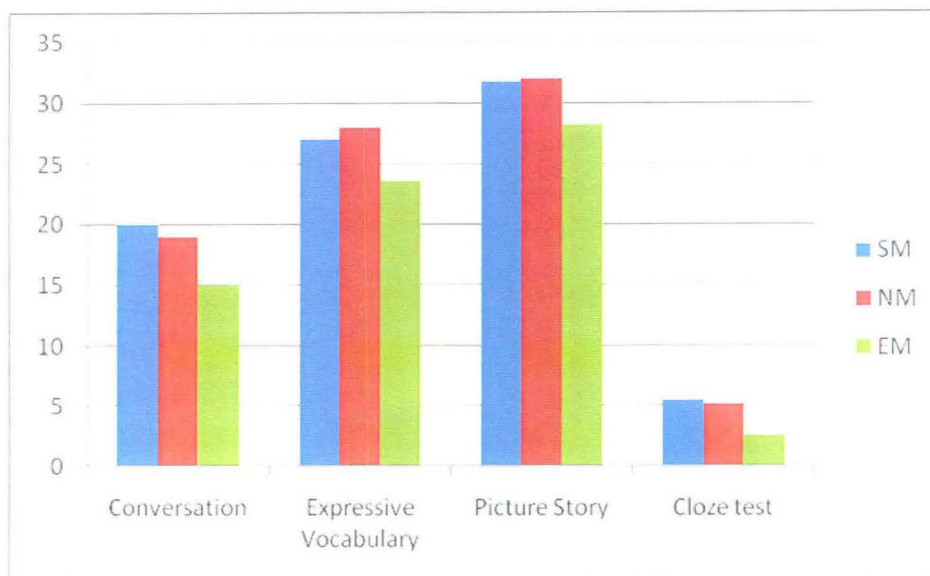


Figure 8: Performance of Class IV on BICS and CALP (Sema and Nagamese)

4.9 Meta-Linguistic tests

The Meta-Linguistic tests were given to a smaller sample of 30 children who were randomly selected from the total sample. The items in this test consisted of four sub-tests, namely, Arbitrariness of language task, Definitional Skills items, Simple Conversational items, and Word Correction items tests. Each test was aimed at assessing the child's meta-linguistic skills. The tests were administered to Sema, Nagamese and English medium school children in both the classes III and IV in their preferred language. Thus, the Sema and English medium school children were given the tests in Sema language while the children in Nagamese medium were given tests in Nagamese language. The tests given were mostly in the form of games and stories.

The *Arbitrariness of Language Task* was a 'game based item test'. Its main aim was to see that the children undertaking the test have understood that inter-changing the names of the objects shown to them does not change the properties of the object. Three item tests were given to the children. For the tests the children were shown some pictures e.g. pictures of a cat and a dog, a toy aeroplane and memory based objects. The children

were asked some questions after that for which they were required to give their responses in verbal. Then the children were again instructed to interchange the names of the objects given in the pictures, name the aeroplane a 'frog' etc. They were asked more questions based on their basic understanding of everyday concepts on objects and things around them. The children had to respond to all the questions being asked in verbal.

The mean scores for children in Class III in Sema, Nagamese and English were 29.6 ($SD=3.78$), 29.4 ($SD=2.97$), and 26.4 ($SD=1.51$) respectively. The mean scores of Class IV children in Sema, Nagamese and English schools were 30.2 ($SD=1.48$), 30.4 ($SD=0.55$) and 26.4 ($SD=3.28$) respectively (Tables 4.8 and 4.9). The findings show that children of Class III and Class IV in Sema and Nagamese medium performed better in Sema and Nagamese test than compared to the children in English medium school respectively. However, from the figures 9 and 10, we see that the children in Sema and Nagamese medium schools have performed almost the same as the English medium school children i.e. the performance of all the children in the three different schools did not have a wide difference. We see that the use of mother tongue as a medium of instruction from early education did have a positive effect on the mother tongue proficiency of the Sema and Nagamese medium school children. The reasons for the almost equal performances of the English medium school children in MLT tests have been discussed in detailed in the next chapter. The children in Sema, Nagamese and English medium schools were all found to be very forthcoming while expressing themselves in a familiar medium at home though their medium of instruction differed at school.

The *Definitional Skill Test* was a test to assess the children's ability in forming or giving meanings to an object which is not necessarily tied to a 'word referent'. Its aim was to assess the children's use of language in defining abstract objects. This test was a story based item test where a 'toy bird' was placed before the child and the researcher narrated a story. The child was asked to repeat the story. Then some questions were asked and the child had to give verbal responses. More questions were again asked after the 'toy bird' was removed from the child's view and the child had to respond to all the questions in verbal.

The mean scores for children in Class III in Sema, Nagamese and English were 4.4 ($SD=0.55$), 3.8 ($SD=0.44$), and 4 ($SD=0.70$) respectively. The mean scores of Class IV children in Sema, Nagamese and English schools were 4.6 ($SD=0.55$), 5 ($SD=0$) and 3.2 ($SD=1.09$) respectively (Tables 4.8 and 4.9). Thus, the findings show that children of Class III and Class IV in Sema and Nagamese medium performed better in Sema and Nagamese test than as compared to the English medium school children respectively. Thus, we see that the use of mother tongue as a medium of instruction from early education has a positive effect of mother tongue proficiency of the child. However, looking at figures 9 and 10, we see that there is not much difference in their performances. In both Class III and Class IV, the children in Sema, Nagamese and English medium were found that they could relate to objects, form and give meanings to it even when the object was not tied to the referent word.

The *Simple Conversation Item Test* was aimed at assessing the child's correct and the incorrect way of conversational skills. It was aimed at to assess the logical structure of words and sentences as was understood by the child. The items in this test consisted of two story items. The children in Sema, Nagamese and English medium schools were narrated the short stories and were asked two illogical questions or statements after that. The children had to give their responses verbally.

The mean scores for children in Class III in Sema, Nagamese and English were 5.4 ($SD=0.89$), 6.2 ($SD=0.45$), and 4.4 ($SD=0.89$) respectively. The mean scores of Class IV children in Sema, Nagamese and English schools were 5.8 ($SD=0.45$), 5.4 ($SD=0.89$) and 4.4 ($SD=0.89$) respectively (Tables 4.8 and 4.9). The findings show that children of Class III and Class IV in Sema and Nagamese medium performed better in Sema and Nagamese test than compared to the English medium school children respectively. Thus, we see that the use of mother tongue as a medium of instruction from early education has a positive effect of mother tongue proficiency of the child. However, their differences are not very wide as can be seen from their mean scores and from the figures 9 and 10. The children in Sema, Nagamese and English medium schools were found to be conversant in their own

mother tongue and had little difficulty in understanding the words and sentences given to them. They had no difficulty in understanding the words i.e. the logical structure of words and sentences, given to them in their mother tongue.

The *Word Correction Item Test* was aimed at assessing the children's meta-linguistic or the meta-cognitive language skills. The test consisted of a story followed by five correct or incorrect or ungrammatical sentences. The children in Sema, Nagamese and English medium schools of Class III and Class IV were narrated a short story by the researcher. After the narration of the story, the children were told to listen to the sentences being read out to them carefully. Then, they were asked to repeat the wrong sentences being read out to them with appropriate corrections in verbal.

The mean scores for children in Class III in Sema, Nagamese and English were 7.2 ($SD=0.84$), 6 ($SD=2$), and 6 ($SD=1.41$) respectively. The mean scores of Class IV children in Sema, Nagamese and English schools were 5.8 ($SD=0.45$), 6 ($SD=1.41$) and 5.2 ($SD=1.78$) respectively (Tables 4.8 and 4.9). The findings show that children of Class III and Class IV in Sema and Nagamese medium performed better in Sema and Nagamese test than compared to the children in English medium school respectively. Thus, we see that the use of mother tongue as a medium of instruction from early education has a positive effect of mother tongue proficiency of the child. However, we can also see that the differences in performance are not very wide between the Sema, Nagamese and English medium school children as can be seen from the figures 9 and 10. The children in Sema, Nagamese and English medium schools had all performed almost equally in finding out the ungrammatical or wrong sentences and correcting them. They were also able to quickly find out the wrong and ungrammatical sentences being read out to them. They had little difficulty in understanding the words and sentences given to them.

The reasons for the not very wide difference in performances of the English medium schools and the Sema and Nagamese schools in Meta-Linguistics tests have been discussed in detailed in the following chapter.

Table 4.8: Mean Scores and Standard Deviation of Class III children in Sema, Nagamese and English medium schools on Meta-linguistic test

Medium of Instruction		Arbitrariness of language task	Definitional Skill test	Simple Conversation test	Word Correction test
SM	Mean	29.6	4.4	5.4	7.2
	SD	3.78	0.55	0.89	0.84
NM	Mean	29.4	3.8	6.2	6
	SD	2.97	0.44	0.45	2
EM	Mean	26.4	4	4.4	6
	SD	1.51	0.70	0.89	1.41

Table 4.9: Mean Scores and Standard Deviation of Class IV children in Sema, Nagamese and English medium schools on Meta-linguistic test

Medium of Instruction		Arbitrariness of language task	Definitional Skill test	Simple Conversation test	Word Correction test
SM	Mean	30.2	4.6	5.8	5.8
	SD	1.48	0.55	0.45	0.45
NM	Mean	30.4	5	5.4	6
	SD	0.55	0	0.89	1.41
EM	Mean	26.4	3.2	4.4	5.2
	SD	3.28	1.09	0.89	1.78

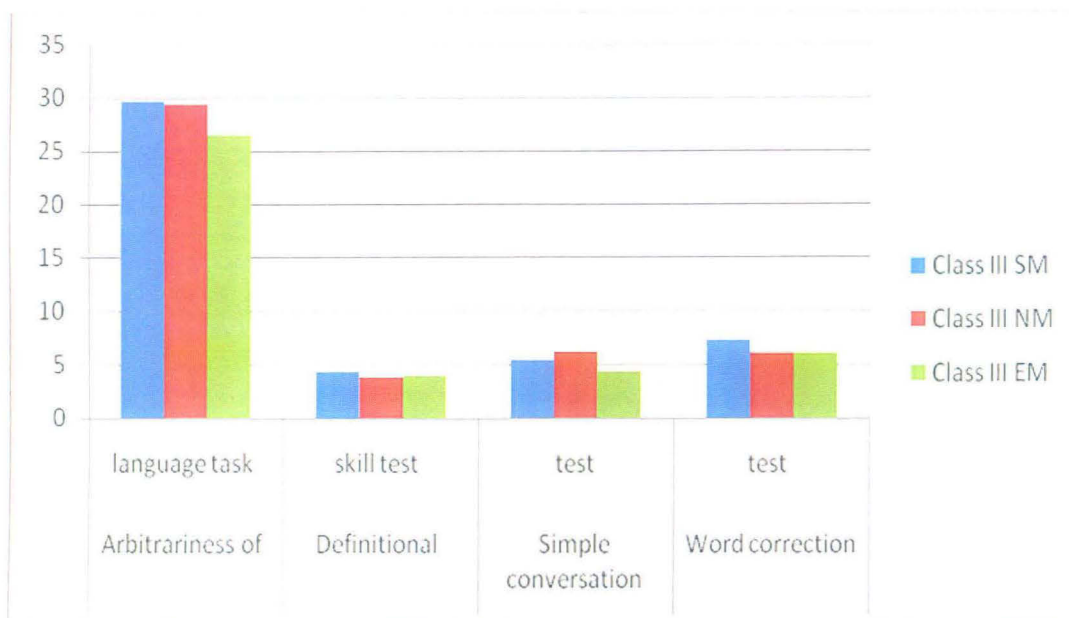


Figure 9: Class III Sema, Nagamese and English medium on MLT

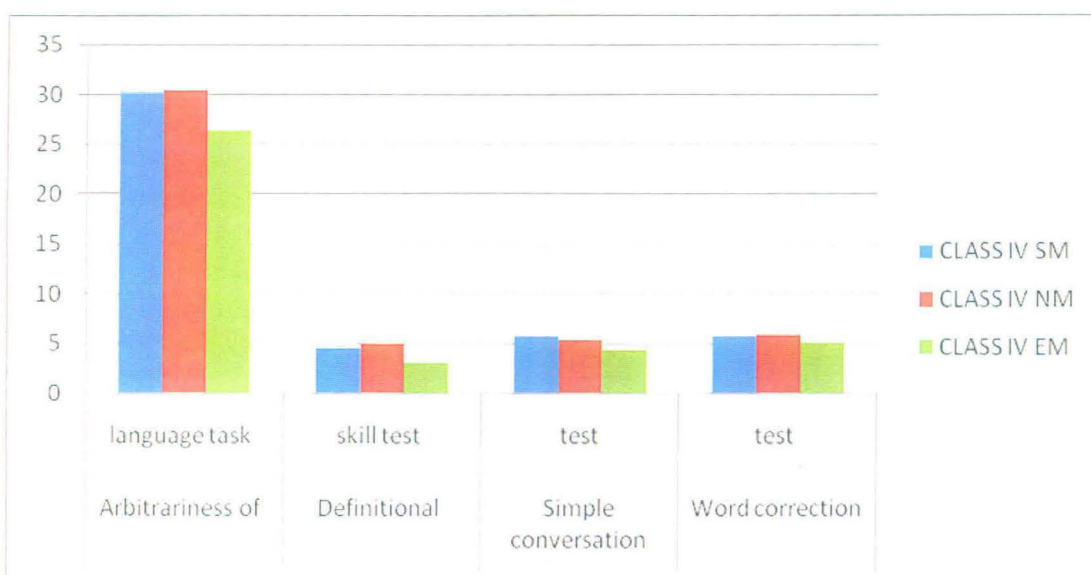


Figure 10: Class IV Sema, Nagamese and English medium on MLT

Tests of Between-Subjects Effects					
Dependent Variable: Scores in EVS					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
MI	2.344	2	1.172	127	0.881
GRADE	110.45	1	110.45	11.971	0.001
MI * GRADE	129.233	2	64.617	7.004	0.001
Error	1605.367	174	9.226		
Total	23255	180			
R Squared = .131 (Adjusted R Squared = .106)					

Table 4.10: ANOVA scores for EVS

Tests of Between-Subjects Effects					
Dependent Variable: Scores in Mathematics					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
MI	908.1	2	454.05	35.627	0
GRADE	153.089	1	153.089	12.012	0.001
MI * GRADE	92.078	2	46.039	3.612	0.029
Error	2217.533	174	12.744		
Total	25950	180			
R Squared = .342 (Adjusted R Squared = .323)					

Table 4.11: ANOVA scores for Mathematics

Tests of Between-Subjects Effects					
Dependent Variable: Scores in Oral Reading Test					
Source	Type III Sum of squares	df	Mean Square	F	Sig.
MI	195.378	2	97.689	18.912	0
GRADE	68.45	1	68.45	13.252	0
MI * GRADE	12.4	2	6.2	1.2	0.304
Error	898.767	174	5.165		
Total	14197	180			
R Squared = .235 (Adjusted R Squared = .213)					

Table 4.12: ANOVA scores for ORT

Tests of Between-Subjects Effects					
Dependent Variable: Score in Reading Comprehension					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
MI	15.211	2	7.606	4.004	0.02
GRADE	5.00E-02	1	5.00E-02	0.026	0.871
MI * GRADE	1.9	2	0.95	0.5	0.607
Error	330.5	174	1.899		
Total	6345	180			
R Squared = .049 (Adjusted R Squared = .022)					

Table 4.13: ANOVA scores for RCT

CHAPTER 5

5.1 Discussion and Conclusions

Chapter 5

5.1 Discussion and Conclusions

The findings of this study have showed that there is a relationship between the mother tongue medium of instruction and academic achievement. From the findings of the result and analysis, we can come to the conclusion that children in mother tongue medium schools i.e. Sema and Nagamese have performed better than the children in English medium school. As the children in the Sema and Nagamese medium of instruction use their mother tongue and the community language as a medium of instruction in the early years of their school education, they could relate to the concepts, grammatical structure of sentences, the abstract ideas etc given to them as tests with ease. Their significance level of performances with the English medium children was found to be positive for Mathematics, Oral Reading tests, reading Comprehension Tests as was showed in the two-way analysis variance given at Table 10–13. Thus, from the findings of this study we can say that Mother Tongue as a medium of instruction has had a large positive effect on children's performance in higher order language skills like in their level of understanding, cognitive flexibility, problem solving ability, linguistics competency, meta-linguistic abilities etc.

Studies by Balkan (1970), Duncan and DeAvila (1979), Kessler and Quinn (1980), Bialystok (2001), have shown that children in mother tongue medium school perform better than the English medium school children because the concepts and ideas that are taught in the classroom are better understandable when it is explained to the children in their mother tongue. Children are positively affected when there is a use of mother tongue in the early school education as they are able to internalize the mathematical concepts, the structures of language and logical sentences, relate their school learning to the environment around them etc. The use of Mother Tongue in early education acts as an effective and efficient medium for the transfer of concept and ideas to children whose mother tongue is not English. However, there are also many other factors which have contributed to the good performances of children in mother tongue medium instruction schools. These factors

are as follows: the resources available after school, in the school, around the school; the standard level of learning materials; the form and quality of the medium of instruction; the speed at which the children process the information being given to them; how much quality time and efforts the children, parents, teachers, etc put in to make a child learn; the children's socio-economic background; their personal ability; their ethnic background; etc. Studies by researchers such as Heyns (1974), McPartland (1969), Rosenbaum (1976) have showed that the "classrooms composition rather than of school affects the quality of students learning environment and consequently his or her scholastic achievement". Brim, Glass, Neulinger, & Firestone, (1969) also talked about the "highly convertible resource in educational and social systems" as an effective means of achieving children's' learning." Eshel, (1980) as quoted in Cummin's (1983), said that the "socio-economic background especially the parents' education specifically plays an important role in explaining classroom achievements of children." Further, "the possibility of a greater environmental dependency of low-resource students was pointed out by research on academic achievement (Coleman et al., 1966; Spady, 1973) and on academic expectations (Harp & Richer, 1969; Thornton & Eckland, 1980)."

In the present study, the researcher found that most of these children, especially the English medium school children were found to be regular church attendees. These children were taught to read and write the Sema medium Bible at church once every week. Tests or 'competitions' as the children named it were also held once every month to assess the children's knowledge and understanding of the Sema language Bible through the Sema language. Thus, we see that there are many factors outside the regular classroom and school environment that contributes to the children's academic achievement.

In the tests of EVS, though the Sema and Nagamese children had performed better, most of the Class III and Class IV children in Sema, Nagamese and English medium schools had performed almost equally. Though the Grade and the interaction between the Medium of Instruction (MI) and Grade did have significant influence, it was found that the Medium of Instruction alone did not have any significant influence on the performance of children. The reasons for this could probably be attributed to the fact that the children in

Sema and English resided in a Sema language environment where the use of Sema was strongly counseled and advocated to the children even after school through the Churches. The fact that these children belonged to lower socio-economic background families did not matter much when it came to learning the Sema language or the Nagamese language. The differences of performances between grades especially amongst the Class III and Class IV students in Sema medium school can be attributed to the children's personal interests, perseverance and abilities and also to the classroom teachers teaching techniques. Interestingly, despite their above average performance in EVS, most of these children, when asked by the researcher whether they liked science as a subject, all replied in negative. The reasons as the children responded were attributed mostly to the 'to the teacher and his/ her teaching techniques' while the teacher, on the other hand replied to the 'attitude' of the children who already come to school with a preconceived notion that "science is difficult" and "boring". The difficulties in translating scientific words and replacing it with a mother tongue word also seemed to be posing as a deterrent for effective communication and teaching. As Shukla, (1974, p.238) says, "The teachers learnt their science through the medium of English and they still prefer to use the English terms in their teaching of science which probably the students, whose medium of instruction is Hindi '(or mother tongue)', find hard to understand."

In the test of Mathematics, the Sema and the Nagamese medium school children had outperformed the English medium school children. The effect of Medium of Instruction, Grade, and the interaction between Medium of Instruction and Grade were all found to be significant. Between Grades, it was found that the Class III and Class IV Nagamese medium school children had outperformed the Sema and English medium school children. Again, most of the children in Nagamese medium school said that their favorite subject was mathematics because the 'teacher was good', they could 'understand his explanations', 'He related solving the mathematical problems to everyday life' etc. The teacher on the other hand also seemed to be well pleased with his students and termed them as 'very bright students'. For the Sema medium school, some children performed better than their classmates and when asked whether they liked mathematics as a subject, the researcher got 'mixed' responses from children. According to the teachers of these

Class III and Class IV children, the class composition was the main reason for the students' good or bad performances. The teacher, who teaches both the Class III and the Class IV batches, on being asked what she thought about her two Classes, she replied that the Class III batch children were a 'brighter lot' and their class was more 'competitive' compared to the Class IV batch children. The English medium school children, on the other hand, were found to be having difficulty in understanding the questions being asked to them though most of them replied to the researcher that they find Mathematics 'easy' and their teacher 'very good'. They all liked their mathematics teacher who 'explained well'. The poor performances of the children can be attributed to what Alladina (1985, p.217) says

"In most cases, second language learners have the conceptual competence in maths but fail to perform satisfactorily because traditional maths teaching and problem solving are invariably mediated through language and culturally determined content. For obvious reasons, second language learners are at a disadvantage from the start."

The teacher of the English medium school stressed on the non-availability of extra 'time and efforts' on the part of the children as well as parents or guardians after school hours which was causing as a deterrent to the performances of her children. She rued the fact that most of these children after school 'never opened their books' but were engaged in doing 'household chores' or helping their 'family earn extra money'. This holds true for most children's families from low income groups as Shukla (p.243) says,

"Adults are handicapped by the non-availability of material aids, but, over and above all, time seems to go into the effort of living. Working for wages six to seven days a week for long hours is one part of it; the rest of the time is spent in collecting things, such as milk, vegetables and groceries which cannot be purchased in bulk due to the non-availability of sufficient money or refrigeration."

Thus, they engage their children to work after school to earn whatever little money they can earn to support their household expenses.

In the test of Oral Reading and Reading Comprehension too, we have seen that children in Sema and Nagamese medium have performed better than the children in the English medium school. The Medium of Instruction had a significant influence on the performance of the children. However, the effect of Grade and the effect of the interaction between the Medium of Instruction (MI) and Grade were found to be insignificant for the RCT. Though, the English medium school children resided in an area where their mother tongue was strongly advocated and taught after school, they were still not able to match the Sema and the Nagamese medium school children in the Sema and Nagamese versions of the test. The English medium school children, as observed, very conveniently chose to omit the difficult words given in the paragraphs'. Those amongst the few who tried to read the difficult words either 'mispronounced' or 'substituted' the difficult word for another word. Thus, the use of mother tongue as a medium of instruction from the early school had significant results for the Sema and Nagamese medium school children. As studies by Bain (1975), Bain and Yu (1980), Ben-Zeev (1977a, 1977b), Cummins (1978a), Cummins and Mulcahy (1978), Genesee, Tucker and Lambert (1975), Feldman and Shen (1971), Ianco-Worrall (1972) etc have found that this evidence "prove that bilingual children were better able to analyze linguistic meaning and are more sensitive to aspects of interpersonal communication than unilingual children. (Cummins, p.120)"

In the test of Individual mathematical ability, children in Sema and Nagamese medium school children again performed better than the English medium school children. Balkan (1970), Duncan and DeAvila (1979), Kessler and Quinn (1980) as quoted in Cummins (1983, p.120) found that there was a positive association between bilingualism and both aspects of cognitive flexibility. The children in Class III and Class IV of Sema and Nagamese medium schools were observed to be relating the mathematical concepts given to them to their everyday life situations. They could solve the problems given to them without much help for interpretation from the researcher. The English medium school

children, on the other hand, were found to be solving the problems very mechanically and had difficulties in understanding the concepts given to them. Thus, the researcher had to interpret the questions asked to them in their mother tongue for these children.

Thus, the researcher's first hypotheses i.e. the classroom achievement of children in Sema, Nagamese, and English medium primary schools will show significant differences has been proved right. The English Medium Schools are not necessarily better than the Mother Tongue medium schools but they were found to be almost equal or lower in their performance level where the quality of schooling, the socio-economic status and other characteristic differences in the students were controlled for.

The Second hypotheses i.e. teaching the mother tongue medium children (Sema in school as well as home) and Community language medium school (Nagamese in school but Kachari at home) through English medium will have a subtractive effect on the development of the mother tongue competence has been proved wrong. It was found that the children in Sema and Nagamese medium schools had performed better than the English medium school children for all tests except for the English version test of BICS and CALP. The use of mother tongue from the early school had indeed help the children in gaining an added edge above the English medium school children.

The third hypotheses i.e. there will be significant differences between children from the English medium school, the Mother Tongue medium school and Community language medium school in their level of understanding and conceptual development in school subjects was partially proved. As we had seen from the ANOVA scores, the effect of Medium of Instruction was not significant for the test of EVS but was significant for Mathematics, Oral Reading Test and Reading Comprehension Test.

In the BICS and CALP tests, children in Sema and Nagamese schools performed better than the English medium school children in the Sema and Nagamese test. They were

found to be more forthcoming and creative in their thinking as well as responses as compared to the English medium school children. However, they were outperformed in the English version of the test by the English medium school children. The English medium school children were also forthcoming in their responses for the Sema and English test. However, they could not perform as creatively as the Sema and Nagamese medium school children. The reasons can be attributed to the fact that these children were taught in a medium other than their mother tongue and therefore were less able to express themselves. These children were not gaining as positively as the children in Sema and Nagamese schools in their mother tongue language abilities though they live in areas where the use of mother tongue are widely spread and strongly advocated. Thus, we can say that the “positive relationship between bilingualism and divergent or ‘creative’ thinking abilities” as was found by Cummins and Gulutsan (1974), Scott (1973) in their studies does not hold very true for the English medium school children. Thus, the fourth hypotheses i.e. the Basic Interpersonal Communication Skill (BICS) and Cognitive and Academic Language Proficiency (CALP) of mother tongue medium, community language medium and English medium school children will vary significantly has also been proved right.

In the Meta-linguistic test too, it was found that children in Sema and Nagamese medium school had performed better than the English medium school children. However, their performances were almost equal to the English medium school children. Vygotsky (1962) as quoted in Cummins (1983, p.120) says that children will be able to see his or her language as “one particular system among many and view its phenomena under more general categories, and this leads to awareness of his linguistic operation” (p.110) when they are able to express that same thought in different languages. Thus, we can say that in this tests the strong advocacy for learning the Sema language through the churches have helped the English medium school children to perform almost the same as the Sema and Nagamese medium school children. There are other factors involved as well as Shukla (p.242) points out, “the reading ability improves in direct relationship to the amount of reading done by the children. It is not only the non-availability of material goods like radios, televisions, books, magazines and newspapers that minimizes intellectual stimulation, but also minimum interaction with parents and adult members of the family.”

Children in all the three medium school were found to have showed almost an equal significance in their performances of the Meta-linguistics tests.

The vastness of researches and studies conducted on the significance of mother tongue medium as a language of instruction are indefinite. But focusing the study in the north-eastern state of Nagaland is a new attempt in itself, especially when much policies and projects have been enthusiastically undertaken by the state and its' citizens to reinstate the primary education as the basic fundamental right of every child in the state. As the state marches towards achieving its' goals of educating every child and in turn build them to become the voices for a better tomorrow, the researcher hopes this study will help in furthering the educational forms and methods of the state.

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APPENDICES

APPENDIX – I

Class III

Test of Science

Time: 1 Hr

Answer the following questions

1. Why do we need food?

Ans:

2. What should you do before taking your meal?

Ans:

3. Why do we wear cotton clothes during summer?

Ans:

4. Why do animals not wear clothes?

Ans:

Choose the right answer

5. We see things with our

- (a) Ears (b) Nose (c) Eyes (d) Skin

6. We celebrate Republic Day on
(a) 26 January (b) 25 December (c) 15 August (d) 1 January

Match the following

7. Column A

- (a) Cow
- (b) Sheep
- (c) Crow
- (d) Snake

Column B

- (i) Bleats
- (ii) Caw-caw
- (iii) Moo
- (iv) Barks
- (v) Hiss

Fill up the blanks

8. _____ is a festival of lights. (Christmas/Diwali/ Id)
9. _____ grows vegetables and fruits.
(Farmer/carpenter/tailor)
10. In spring season we hear the _____ chirping.
(Animals/People/ Birds)

APPENDIX – 2

Class IV

Test of Science

Time: 1 hr

Answer the following questions

1. Why can we not live on the moon?

Ans: _____

2. Why is it necessary that we should keep our earth clean?

Ans: _____

3. Where should one go if we fall sick?

Ans: _____

4. What kinds of food should we eat to stay healthy?

Ans: _____

Name the following:

5. Any four tribes in Nagaland.

(i) _____

(ii) _____

(iii) _____

(iv) _____

6. Four living things that you see around you.

- (i) _____ (ii) _____
(iii) _____ (iv) _____

7. Write 'True' or 'False'

- a) Agencies which look after sick people are called hospitals.
b) Kohima is the capital of Nagaland
c) Members of the village council are elected by people living outside the village.
d) The shape of the earth is square.

8. Fill up the blanks.

- (a) The _____ brings letters to our doorstep.(Postman/Driver)
(b) The organ used for tasting is called _____.(Ears/Tongue)
(c) The fastest means of transport is _____.(Bus/Airplane)
(d) Changing of water into water vapour is called _____.
(Evaporation/condensation)

9. Choose the correct answer from the following.

1. The four types of soils are

- i. Gravel/sand/ Clay/ Loam ii. Water/Air/Minerals/Animals
iii. Tree/shrub/Grass/Herbs iv. Flight/Space/Earth/Moon

2. North, East, West and South are

- i. Four directions ii. Four places
iii. Four positions iv. Four man-made things

10. Match 'Column A' with 'column B'.

Column A

Column B

- | | |
|----------------|--|
| I. Plants | (a) We cannot see distant things properly. |
| II. Cloudy | (b) Gives us food, clean air, and make our surroundings clean. |
| III. Omnivores | (c) People wear thick woolen clothes. |
| IV. Winter | (d) They eat both plants and flesh of other animals. |
| | (e) They eat flesh of other animals. |

APPENDIX-3

Class III

Test of Mathematics

Time: 1 hr

1. Write the expanded form of the number 23.

$$23 = \boxed{} + \boxed{}$$

2. Write the missing numbers: 4, _____, _____, 16, 20.
3. James has 15 marbles. He gave 6 marbles to his friend Michael. How many marbles does James have now?

$$\begin{array}{r} 15 \\ (-) 6 \\ \hline \boxed{} \end{array}$$

4. What is the missing number? $16 \div 4 = \boxed{}$
5. A goat has 2 horns. How many horns will there be for 8 goats?

$$2 \text{ horns } \boxed{} \quad 8 \text{ goats} = \boxed{} \text{ horns}$$

6. Michael has 4 sweets with him. Peter has 5 sweets with him. John has no sweets with him. How will you divide the sweets between Michael, Peter and John so that all three of them have equal number of sweets?

	Number of sweets
Michael	4
Peter	5
John	0
Total	$\boxed{}$

Number of sweets between Michael, Peter and John =

$$\boxed{} \div 3 = \boxed{} \text{ sweets}$$

7. Write whether you will use Centimeter/Meter or Grams/Kilograms or Milliliter/Liter to measure the following things:

(A) Water in a large bucket: _____.

(B) One potato: _____.

(C) One chalk: _____.

(D) Length of a door: _____.

8. Toli got 1 Kilogram rice for Rs. 10, 1 Kilogram Dal for Rs. 12 and 1 Kilogram beans for Rs. 30. How many kilograms of goods did she buy? How much money did she spend altogether?

	Kg	Rs
Rice	1	10
Dal	1	12
Beans	1	30
Total		<input type="text"/>

9. Mary begins her school at 8 am in the morning. She leaves her school at 1: 30 pm in the evening. How many hours is she in school?

10. How many 5 rupees make Rs. 20?

APPENDIX – 4

Class IV

Test of mathematics

Time: 1 hr

1. Insert $>$ or $<$ in the box. $267 \square 276$

2. Write the divisor, dividend, quotient and remainder for the following number: $98 \div 3 =$

3. By how much is 750 less than 1000?

4. Fill in the blanks: $300 + 49 + 8 = \underline{\hspace{2cm}}$

5. Encircle the smallest number : 214, 242, 211

6. You have 10 little fingers and 10 little toes. Your friend has 10 little toes and 10 little fingers. What is the sum of 20 little fingers and 20 little toes?

7. Sita's lunch break is for 45 minutes. It takes her 20 minutes to finish her lunch and 15 minutes to help her friend sweep the classroom. How much time is left with her?

8. There are 56 sweets with you. Divide the sweets equally between your four friends?

-
9. Fill up the boxes

Rs. 290.75p
+Rs. 67.23p

807 kg
- 450 kg

232 ml
x 6 ml

756 cm
+ 234 cm

10. Mr. Ramesh has with him Rs 5000. He bought a shirt for Rs. 150. Then he made a black suit for himself for Rs 260. To attend a meeting, he needed a neck-tie. So he purchased a neck-tie for Rs 70. The rest of the money, Mr. Ramesh put it in the bank. How much money did Mr. Ramesh spend? How much money did he put it in the bank?

APPENDIX-5

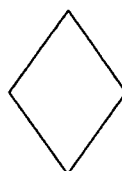
Class III Individualized Test of mathematical Ability

1. The child will be shown a coin and a rupee note. He or she will be asked to name the shape of the coin and the rupee note.
2. The child will be asked to identify the length and the breadth of the classroom.
3. $1 \times 5 = 5$
 $2 \times 5 = 10$
 $3 \times 5 = 15$
 $4 \times 5 = 20$
 $5 \times 5 = ?$
How did you find the answer?
4. $7 \times 3 = 21$
 $7 + 7 + 7 = ?$
 - (a) Are the answers the same when you multiply and add the numbers?
 - (b) Is it necessary to add the numbers?
5. Look at the sum and answer the following questions given below.

A crow has two legs and a cow has four legs. How many legs will five crows and three cows have?

$$2 \times 5 = 10$$
$$4 \times 3 = 12$$
$$10 + 12 = 22$$

- (i) What is the number 10 in the sum?
 - (ii) What is the number 12 in the sum?
 - (iii) What is the number 22 in the sum?
6. Some amount of coins in different denominations – probably 25p, 50p, Rs 1, Rs 2, and Rs 5, will be placed before the child. The child will then be asked questions like
 - i. Which coin is 50p or Rs 1 etc?
 - ii. Can you give me Rs 7.75p?
 - iii. Is there any other way you can give me Rs 7.75p?
7. Look at the figure of the diamond given below. How many straight lines does the diamond have?



APPENDIX-6

Class IV Individualized Test of mathematical Ability

1. You have 2 kilogram weight and 5 kilogram weight with you. How will you use the two weights to measure
 - i. 3 kilograms of potatoes
 - ii. 6 kilograms of rice.
2. Three cardboard cut-out shapes - a square and a rectangle with little difference between them and a triangle, will be shown to the child.



Fig 1



Fig 2

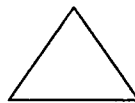


Fig 3

Then, he or she will be asked questions like,

- i. Which one is a square?
 - ii. Which one is a rectangle?
 - iii. Which one is a triangle?
 - iv. How do you know one is a rectangle and the other one a square?
 - v. Can you see any triangles in the square?
 - vi. If yes, how many triangles are there in a square?
3. If we need to know the height, length, and breadth of this room show which sided do we need to measure for each.
4. A grade appropriate sum was taken. The sum was worked out in different steps showing numerical calculations only. The child was asked to explain what these different numbers mean.

Example: Crows hav 2 legs each and cows four each. How many legs altogether 7 crows and 3 cows have?

$$3 \times 4 = 12$$

$$7 \times 2 = 14$$

$$12 + 14 = 26$$

- (i) What do 12 stand for?
 - (ii) Explain how we arrive at this number.
 - (iii) What do 14 stand for?
 - (iv) What do 26 stand for?
 - (v) Are there more crows or more cows?
 - (vi) How is it then the cows have more legs (14) than the crows (12)?”
5. A 16 inch string was taken and a circle was made with it. Then the same string was used to make a rectangular form. The children were asked questions, like,
- (i) What would be the total length of all the four sides of the rectangle together?
 - (ii) Suppose, one side of the rectangle is 5 inches long, what would be the length of the other sides?
 - (iii) Now, if we make a square with the string, what would be the total length of all the four sides of the square? What would be the length of each side?
6. The following coins were placed on the table: Five 25p coins, three 50p coins, six 1 rupee coins and three 2 rupee coins. The child was asked to identify the value of each coin. Further, the children were asked to,
- (i) Give the researcher Rs.11.75 paise from these coins. The number of ways the child performed the task as seen and noted down.
 - (ii) In how many different ways can you give Rs.11.75 out of these coins? Try different ways and show.
7. A farmer had a piece of land which was full of grass for cows to graze. He had two sons and divided the land into two equal halves for the two sons. The elder son built two barns/rooms of 5’X7’ size each and put it in the centre of the grass field. The younger son also built two rooms/barns of the same size and built one in the north east corner and the other in the south west corner of his grass field. (Take a piece of paper, make a grass field; divide it into two equal halves and then show the child where are the barns/rooms placed [you can use some rectangular shapes to show how they are placed on the field])
- (i) Now, tell me which son’s cows have more grass to graze or do they have same? Why do you say so?
8. Let us take a number: 432
- (i) Which number is in the unit place?
 - (ii) Which number is in the tenth place?
 - (iii) Which number is in the hundredth place?
 - (iv) What is the value of 3 in 432?

If we put a 1 next to 2 in 432, what will the number be? [The child has to say “four thousand three hundred twenty one” (& not 4-3-2-1)] What will then be the value of 3? Why will the value of 3 change?

If we put 1 before 4 in 432, what will the number be? [The child has to say “one thousand four hundred thirty two” (& not 1-4-3-2)] What will then be the value of 3? Why will the value of 3 change or not change?

9. The children were asked to work out the following sum and say aloud(verbalyze) while working on the sum:

$$\begin{array}{r} 264 \\ + 33 \\ + 705 \\ \hline \end{array}$$

[How the child does the carry overs will be seen and noted. When the child does the carry over, the child will be asked how to say what does this carry over mean. When the first carry over of 1 is made from the unit place to the tenth place, the child will be asked to say what the value of 1 which is carried over is. Similar questions were repeated for other carry overs.]

10. There were 7 boys in a party and 67 chocolates in a basket which were distributed equally among the 7 boys. Each got 9 chocolates and 4 chocolates remained in the basket.
- (i) Now, tell me, (without any further calculation) what will be the quotient and remainder when we divide 67 by 7?

APPENDIX-7

BICS and CALP Measures for Class III and Class IV

Conversational tasks

1. How are you doing today?
2. What is the first thing you did when you got up this morning?
3. What did you eat today?
4. Do you have any brothers or sisters?
5. How many brothers do you have?
6. How many sisters do you have?
7. Do your brothers and sisters go to school?
8. If yes, are they in the same school?
9. In which class are they studying?
10. What are their names?
11. What does your father do?
12. What does your mother do?
13. Which language do you speak at home?
14. Which language do you speak with your friends?
15. Is your home language the same as your school language?
16. Is the school language easy or difficult for you?
17. Is the text language difficult or easy for you?
18. What is easy or difficult about the language you don't know?
19. Is your teachers' language easy or difficult for you?
20. Do you study after school?
21. Do you take help from others while you study?
22. Who helps you with your homework?
23. Which subjects do you like the best?
24. Why do you like this subject?

APPENDIX-8

Cloze test for Class III and Class IV

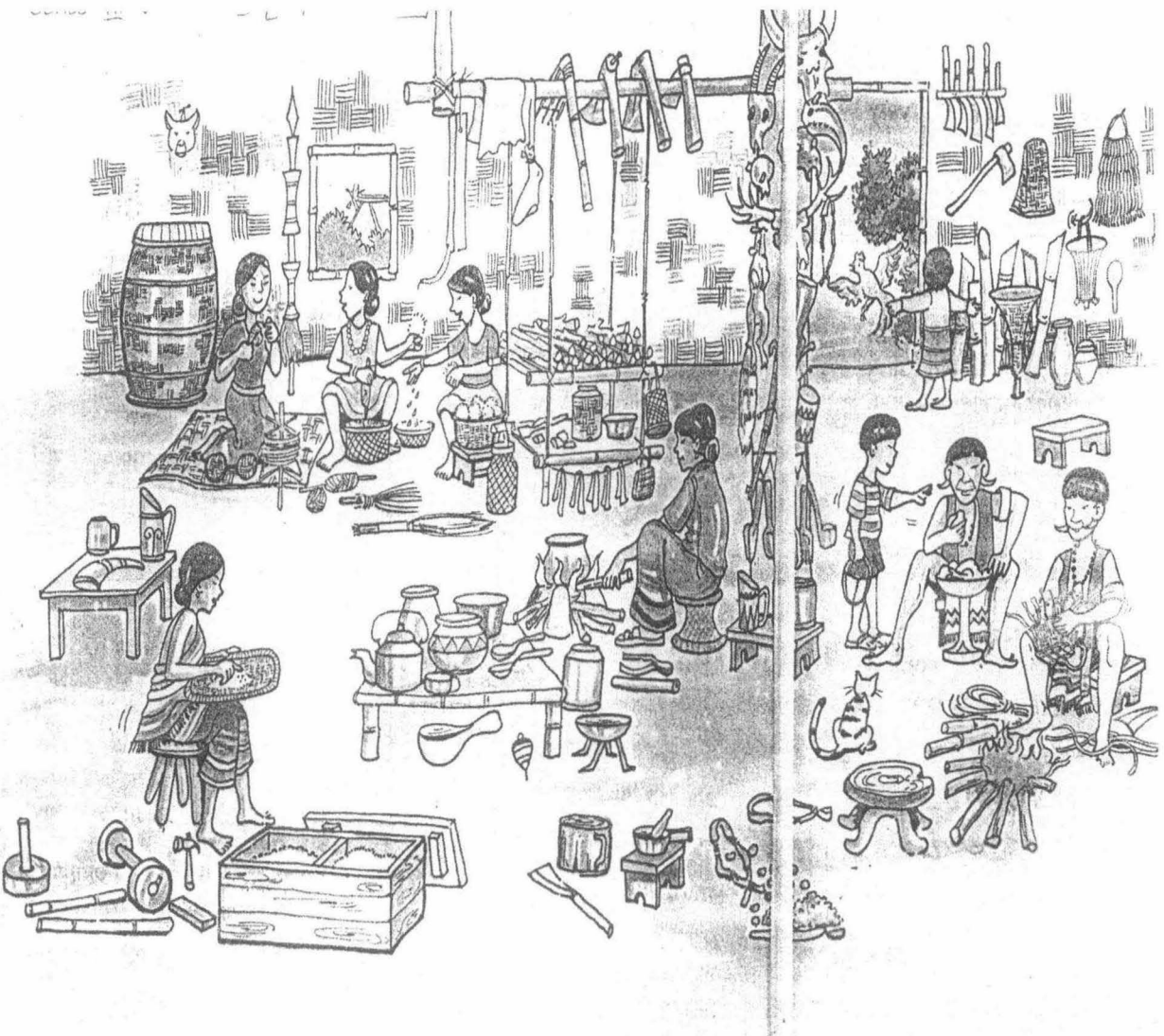
Read the following passages carefully and fill in the blanks using the words given at the bottom of each passage.

- I. A newspaper boy usually delivers _____ at our doorsteps. The newspaper takes birth at the newsroom which collects all the news. Reporters bring in the _____ or at times it comes through the tele-printers which bring _____ from all over the world. Newspapers get their news from agencies. After collecting the news, the editors decide on what is to be printed. It is then handed over to the _____ room. The proofreaders check for any mistakes in the printing rooms. It is then sent to the printing _____.

Messages Newspapers Printing Press News Agencies

- II. One day the sun and the wind had an argument about who was more _____. They saw a man walking on the road and decided to test their _____. The wind boasted to the sun that he could make the man take off his shirt. The sun went behind a cloud. The wind _____ as hard as he could making it very windy. But the man only pulled his shirt _____ around him and kept walking. 'Now let me try,' the sun said and shined _____. The man began to feel hot and decided to take a swim. He took off his shirt and jumped into the pond.

Powerful Closer Strength Blew Wearing Brightly

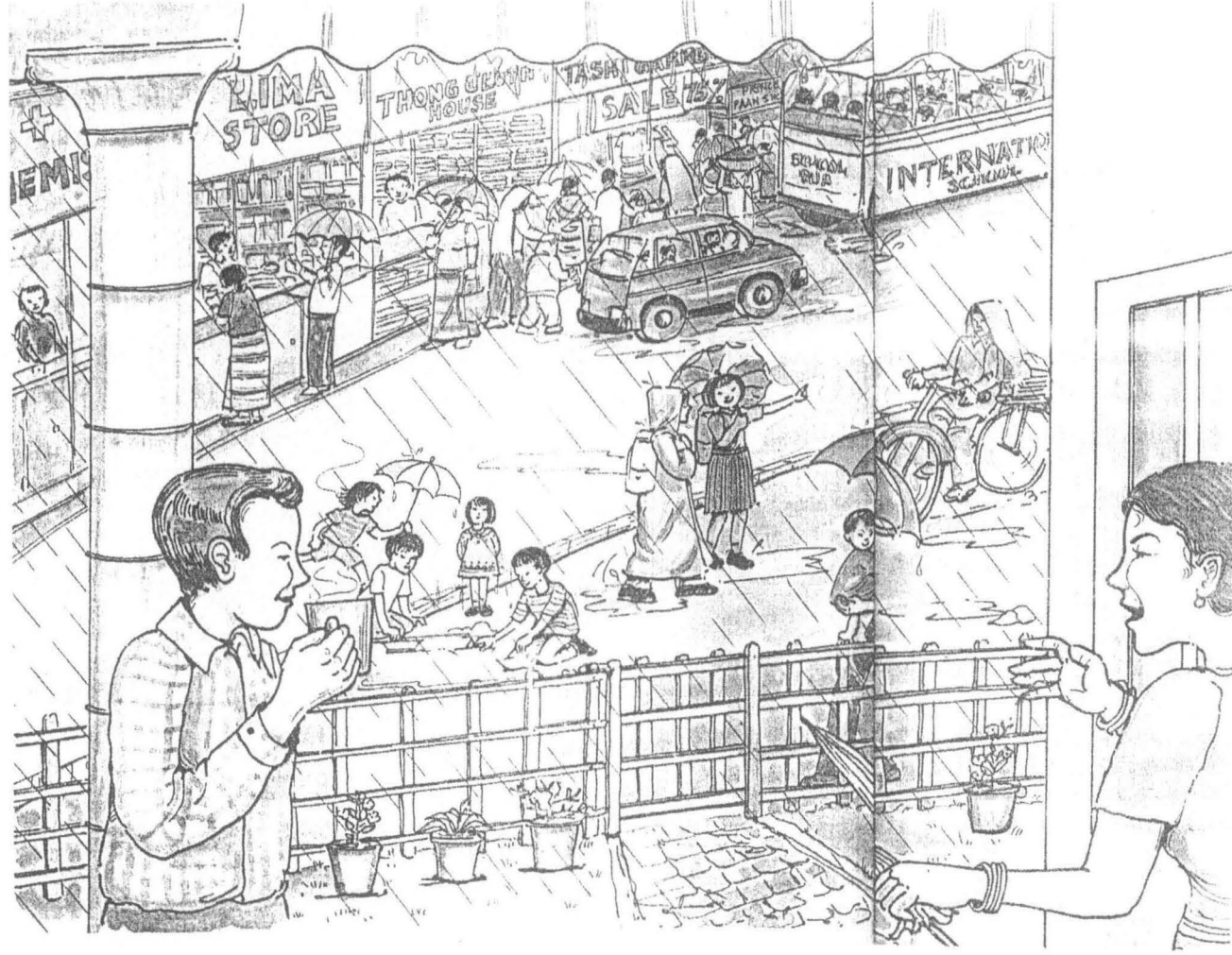


APPENDIX-9
Expressive Vocabulary Test
Class III & Class IV [English medium]

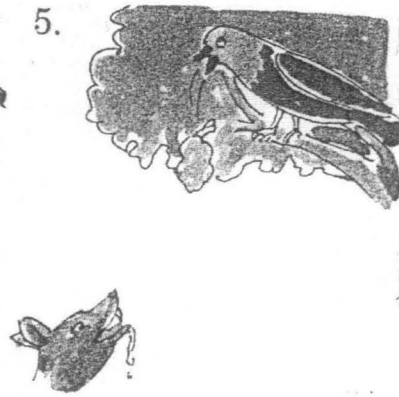
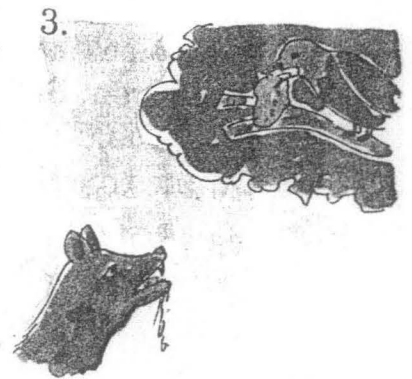
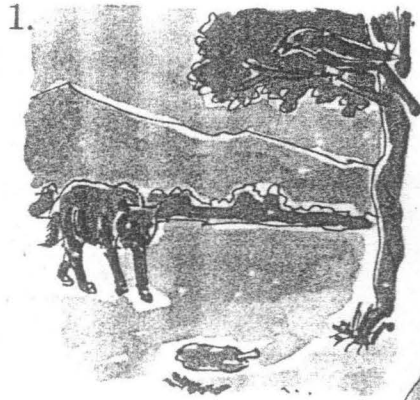
APPENDIX- 10

Expressive Vocabulary Test

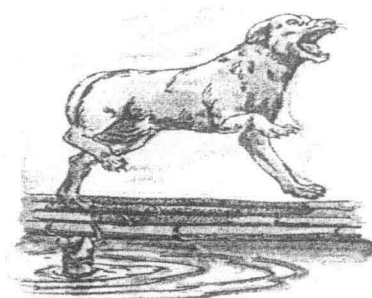
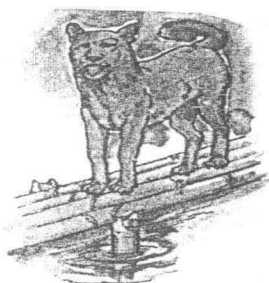
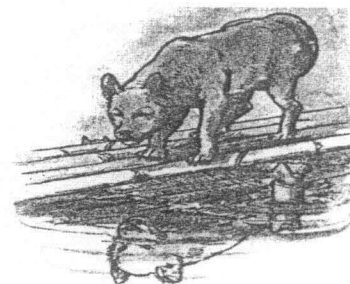
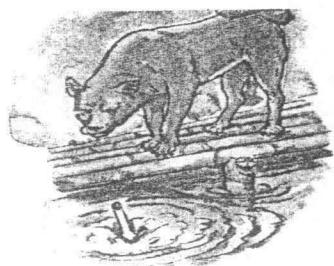
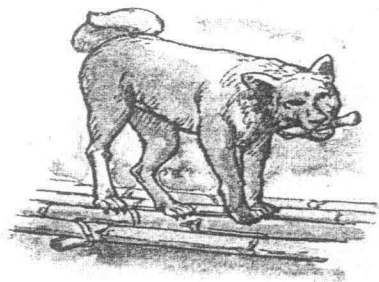
Class III & Class IV [Sema and Nagamese medium]



APPENDIX- 11
Picture story narration
Class III & IV [English medium]



APPENDIX- 12
Picture story narration
Class III & Class IV [Sema and Nagamese medium]



APPENDIX-13

Meta-linguistic tests

a) Arbitrariness of language task

1. Two pictures – one of a cat and the other a dog, will be shown to the child. After showing the pictures, the child will be asked,
 - i. Name the animal in the first picture? (CAT)
 - ii. Name the animal in the second picture? (DOG)
 - iii. What kind of sound does this cat make?
 - iv. What kind of sound does this dog make?

After the child answers correctly, the researcher will tell the child:

Now we will play a game in which we will change the names of these two animals. Suppose all of us agree to call this picture (CAT) a 'DOG' and the other picture (DOG) a 'CAT'. Now tell me,

- i) What is the name of the animal in this picture?
- ii) What is the name of the animal in the other picture?

After the child answers, now tell me

- iii) What kind of sound will the dog make?
- iv) What kind of sound will the cat make?

2. The child will be shown a toy aeroplane. After that, the researcher will tell the child:

We will play a game in which objects will be given new names. Let us name this toy aeroplane 'Frog'. Now, in this game I will ask you some questions and you play the game in answering the questions.

- i. Can the frog fly?
- ii. (If yes) Tell me why can the frog fly?
- iii. (If no) Tell me why can the frog not fly?

3. First, the child will be asked questions like,

- i. What do you see in the sky during day time?
- ii. What do you see in the sky during night time?

Depending on the answers the children give, they will be instructed to inter-change the names of the objects they have mentioned. Then, they will be asked further more questions like,

- i. Now, suppose you get up in the night and look at the sky. What will you see?
- ii. If you look at the sky during the day what will you see?
- iii. Which one is hot? The sun or the moon?

b) Definitional skill test

The researcher will put before the child a 'toy bird' after which the child will be told:

Look at this. This is a fairy bird. This fairy bird is a large green – colored bird and it has two different colored wings. But the most special thing about this fairy bird is that it can make itself 'invisible' whenever it wishes to.

Now you know that a fairy bird is a green colored bird with two wings of different colors. And it can also make itself invisible sometimes. Now you define,

- i. What is a fairy bird?

Suppose your brother or sister has never seen a fairy bird.

- ii. What would you tell him or her to define or describe a fairy bird?

After the child answers, suppose this is the last fairy bird and it dies. (The bird will be removed from the table.) Now tell me,

- iii. Does the name 'fairy bird' have any meaning to you?

c) Simple conversational item test

1. In a dormitory room, eight friends are sleeping. These friends go to sleep at 10 pm and wake up at 5 am every day. One day, there is a theft in the house. One boy named Raju wakes up at the time of theft. When the police come to investigate the

theft, Raju gives his statement to them. After the police leave, Raju returns to the dormitory room and finds all the other boys still sleeping. He too returns back to his sleep. Later, when everyone wakes up, Raju asks the others boys “Did they find the thief?”

Now answer the following question,

- i. Will the other boys understand Raju’s question?
 - ii. Why will they not understand Raju’s question?
2. Manoj and John lives in a house with a dog. The dog is normally let out of the house around 4-5 pm. Then, either Manoj or John goes out, looks for the dog and brings it back to the house every day. On one particular day, Manoj goes out at 2 pm and John goes out at 4:30 pm. They both meet each other outside the house. Suddenly, John tells Manoj, “I forgot to let the dog out.’

Now answer the following question,

- i. Where would Manoj and John look for the dog?

d) Word correction item test

There were two birds – a parrot and a Mynah. Both the birds liked to talk with one another. However, the parrot was a naughty bird, so sometimes it says things in a wrong way. But the mynah always spoke things rightly.

Now imagine that the birds are talking. I will read out 5 sentences to you one at a time. Think that some sentences were spoken by the parrot and some by the mynah. Therefore, some of the sentences are right but some of them are wrong sentences. If at any time of my reading of the sentences you feel that I have read out to you a wrong word or a sentence, you have to correct the error/ mistake and repeat the wrong sentence with the corrections.

Listen carefully.

Sentences

1. The sun rises in the east.
2. When we freeze water we get steam.
3. Dimapur are a district of Nagaland.
4. If we cut down trees the air pollution will rise.
5. We climb to school to read and write.

APPENDIX-14

Index of Quality of Schooling

Areas	Specifications	Full Marks	Marks Obtained	Remarks
A. Physical				
1. Classroom	1. Classroom size 2. Classroom cleanliness 3. Infrastructures – blackboard, chairs, tables, desks, notice boards etc	2 (6) 2 2		
2. School Environment	1. Cleanliness of campus 2. Boundary wall/fencing 3. Plantations	2 (6) 2 2		
3. Facilities	1. Toilets and cleanliness 2. Drinking water 3. Playground	2 (6) 2 2		
B. Organizational				
1. School records	1. Students admission register 2. Students daily attendance register 3. Teachers daily attendance register 4. Stock register 5. Cash book 6. Log book 7. School visit register	2(14) 2 2 2 2 2		
2. School Committees and Community Participation	1. School committees formation and regular meetings 2. PTA meetings and functioning 3. Data and records on executive decisions in various meetings 4. Community Participation	2(8) 2 2 2		
3. School Fund	1. Increasing Corpus Fund and its proper utilization 2. Maintenance of school accounts 3. Certificate furnishing	2 (6) 2 2		

C. Cognitive				
1. Text Books	1. Distribution of text books 2. Distribution of note books 3. Book bank 4. Proper utilization of exercises/activities given in the workbook duly corrected by the teacher	2 (8) 2 2 2		
2. Classroom arrangement	1. Sitting arrangements of students (Benches and Desks/ Chairs/ Tables) 2. Whether boys and girls sit and work together 3. Sitting procedure 4. Display of creative activities of students in each classroom	2 (8) 2 2 2		
3. Teaching and Learning Materials (TLM)	1. Preparation and use of TLM 2. Collection of TLM from the environment and its use in classroom teaching 3. Preparation and use of TLM by students 4. Wall activities and usage 5. Utilization of TLM grant Fund 6. Mutual cooperation among teachers 7. Adoption of educational technology	2 (14) 2 2 2 2 2 2		
4. Regular functioning of school programme plan	1. Annual calendar for school activities 2. Scheme of lesson plan 3. Maintenance and analysis of lessons note by each teacher 4. Activity bank in each subject	2 (8) 2 2 2		
5. Learners evaluation	1. Question bank in each subject 2. Conduct and analysis of Unit test 3. Conduct of half yearly and	3(24) 3		

	annual examination 4. Evaluation of SUPW 5. Evaluation of home assignments 6. Evaluation of co-curricular activities 7. Recording of evaluation outcome 8. Sharing of evaluation outcomes 9. Use of progress card	3 3 3 3 2 2 2		
6. Addressing diversity	1. Focus on STs. 2. Focus on SCs. 3. Focus on mainstreaming drop outs 4. Focus on girls. 5. Focus on low achievers	3(15) 3 3 3 3		
7. Classroom process	1. Active participation of students in teaching learning activity 2. Leadership quality of students in different activities 3. Use of varieties of activities in classroom 4. Activities with provision of feedback 5. Teachers' acceptance of students irrespective of boys, girls, SC & ST 6. Group activity 7. Effective use of blackboard by students and teachers 8. Regular correction of differently-abled students 9. Innovative teaching methods	3 (27) 2 3 3 3 3 3 2		

	by teachers	3		
	10. Language of the teachers	2		
Total Marks		150		

Scores	Category
Above 120	A
Above 100-119	B
Above 60-99	C
Below 60	D