3. Theoretical background

3.0 Preview

The discussion in the previous chapter on the different components of a Multi Lingual Education Programme, paves the way for a brief look at the various underlying theories of learning which form the basis for the activities of such a programme. The present chapter deals with the basic principles of two important learning theories which reinforce the necessity of learner-centred education programmes — Developmental Learning theories and the Cognitive Theories of Bilingualism. This chapter is focuses on justifying the theoretical rationale behind the claim of MTB-MLE programmes that the children should be provided maximum opportunity to develop their cognition in order to mitigate the ever increasing rate of educational failure and wastage. While discussing these theories, the essence of MTB-MLE will be looked at from these theoretical stand points.

3.1 Developmental Learning Theories

3.1.1 Piaget

Jean Piaget, a Swiss scholar, has four stages of human cognitive development. The term cognitive and cognition refers to the child’s ability to think and learn. According to him, there are four stages of human cognitive development. These are

a) Sensory motor stage (From birth to age 2)

b) Preoperational stage (From age 2-7)

c) Concrete operational stage (From age 7-11)

d) Formal operations stage (From age 12 onwards)

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6 This section draws upon Dennis Malone’s ‘Summary of Developmental Learning Theory (Piaget)’ which is stated to be a summary and comments based on: Pat Davis (1991). Cognition and Learning. Dallas: SIL. LinguaLinks™ Version2.5
According to Piaget in the first stage, learning involves development of the body movements and senses. He identifies six different stages of development within this first stage. These are

a) Reflex activity (0-1 month)
b) Self-investigation (1-4 months)
c) Coordination and reaching out (4-8 months)
d) Goal directed behavior (8-12 months)
e) Experimentation (12-18 months)
f) Mental combination and problem-solving (18-24 months)

In the second stage, learning takes place through experimentation. At this stage, children learn to relate symbols to concrete objects. They also develop the capacity to mix ideas and tend to think of inanimate things as having life.

It is in the third stage which is the concrete operational stage during 7-11 years of age that children actually learn to think logically. At this stage, they can relate experience to some kind of internal symbolization. They seem to understand the arithmetical operations and numbers.

At the formal operation stage starting from 12 years of age, learning becomes highly internal and symbolic. In other words, at this stage of development, children can learn abstract concepts without any direct or concrete reference. Children can form hypotheses and even start making complex deductions and test advanced hypotheses. Their capacity of reasoning gets further developed, and they can also evaluate their own and other's way of reasoning.

If we look at the educational implications of this theory for the ethnic minority groups, we see that effective learning actually starts right from the second stage. At this stage, children start learning through experimentation. That is why it is so important that in the pre-school stage and in the stages that follow, children from the ethnic minority groups should be taught through their mother tongue, supported by locally contextualized curriculum, so that their experiments and experiences get repeated both in their home and in their own school. It is equally important to provide the children with the opportunity to talk and discuss any activities that they participate in. These different activities build up their confidence in terms of expressing their thoughts in concrete terms. However, if such activities and discussions take place in an unfamiliar
environment, and more importantly, in a language in which the children do not feel comfortable to communicate, the whole educational process loses much of its meaning. It fails to serve the purpose it actually aims at.

In this context, it is important that the teachers and the people responsible for designing the curriculum should actually know about these developmental stages, since this knowledge is likely to help them to plan the activities required for fostering the development of the different cognitive faculties of the children. The teachers are often seen to plan the lessons without an awareness of the developmental stage of the learners. To add to the problem, most of the time, such lessons are based on a curriculum which might not have considered child development in designing it. In such cases, such lessons and activities fail to have any positive impact on the learners.

Therefore, it is very important that the use of the mother tongue be allowed to give that impetus to the children in their second stage of learning. Once it is started through their MT in the concrete operational stage, it becomes easier for the children to relate their experience to internal symbolic interpretations. Finally, in the formal operation stage, these children, with a strong MT input provided through a culturally contextualized curriculum, can easily grasp abstract concepts and then relate these to concrete experience and hypothesize new concepts.

3.1.2 Schema Theory of Learning

R.C. Anderson, a respected educational psychologist, is the exponent of the Schema theory of learning, expounded by R.C. Anderson, a respected educational psychologist, views organized knowledge as an elaborate network of abstract mental structures which represent the way one understands the world.

This theory emphasizes the importance of teaching general knowledge and generic concepts to the learners. It suggests that much of the learners’ difficulties can be traced to the lack of proper general knowledge, especially in cross-cultural situations. The teachers should help the learners to build schemas and to make connections between ideas. According to this theory, it is essential to have prior knowledge for comprehension of new knowledge. Before introducing new concepts to the students,
teachers should help them to build the prerequisite knowledge and remind them about what they already know.

Research by schema theorists indicate that abstract concepts are best understood after a foundation of concrete, relevant information has been established (Schallert 1982:26). In case of minority students, this prior knowledge can be obtained from their own culture if the curriculum is culturally appropriate. But in most cases, the curriculum reflects the majority or dominant language culture, and the minority students are left with no options to establish a strong foundation of knowledge on the basis of things they know culturally. But in MTB-MLE, the knowledge of the students' background in terms of their culture, tradition, surrounding environment and social atmosphere, plays a vital role in all aspects. As was discussed in the previous chapter, all the materials produced for the programme are made culturally appropriate for the children. Moreover, since the teachers of the programme are also from the community, it becomes convenient for the teachers to enable the learners to see connection between their prior knowledge and the new knowledge which is being imparted. This enables the learners to build a meaningful schema which is further enriched by the addition of new knowledge to the already existing knowledge base of the learners.

3.1.3 Social Learning Theory

Albert Bandura and Lev Vygotsky are the two scholars who emphasized on the fact that the surrounding society of a learner plays a pivotal role in the learning process of the learner. Bandura suggests that much of the human learning is actually the result of what he calls 'modeling'. Modeling is the set of process through which the behaviour of one person or one phenomenon is imitated by the others. According to Bandura, there are several processes involved in this kind of modeling. These are:

a) Attention gaining processes
The modeling must be attractive. In other words, it should have the ability to draw the attention of the others. Otherwise, this will not be imitated, which will prevent it from being transmitted socially. As a result, there will be no learning taking place.

b) Retention processes
The modeling must be memorable. It should have all the elements which will help the learner to retain it in his mind. This can be done through verbal communication, actual physical activities, exhibition of imagery etc.

c) Motor reproduction processes
Complex activities involving nerves, muscles and motion require long periods of skill development. It is also required to be repeated and corrected. In such cases, feedback from others helps the learners in learning the new behavior.

d) Motivational processes
Motivation for learning a particular knowledge or skill is the key to its actual learning. In many instances, it is seen that the knowledge is acquired, but is not being used or enacted. Therefore, it is important to provide some motivational and inspirational activities to the learners. But there also at some point of time, the same kind of motivational incentive for one student may appear to be disappointing to the other. Therefore, it is important to take note of the motivational incentives which are perceived as rewarding by the students.

On the other hand, Vygotsky, as cited in Malone (2001), believes that knowledge is socially constructed, as a product of dialogue and interaction between thought and language (speech). The key concepts of his theory are:

a) Everything is learned twice: first socially (with the help of other human beings), and then privately
b) All knowledge is socially constructed- that is, all learning is group learning
c) Thought and speech are keys to human consciousness
d) Thought is aided by speech, not the reverse

The relationship between a mother and her child explains Vygotsky’s theory. An infant acquires most of his or her basic knowledge concepts of the external world from the mother. For speech also, the child learns from the mother the words which represent his/her actions.

There are number of implications of this theory which reinforce the principle of mother tongue education for minority children. This is because if knowledge is socially
constructed, then it is very important for the learners to be allowed to converse and interact with their mentors and fellow learners. Again, if thought develops as people speak, then the act of speaking is as important as the act of listening for learning new concepts, skills shared by others. This happens in the case of the minority students only if education at least starts in a language in which they are confident of expressing themselves. In MTB-MLE programmes, a great deal of emphasis is given on the acquisition of oral literacy by the learners. A considerable amount of time is actually expected to be devoted for developing the skills for speaking the language. The learner-centered and activity-based method in MTB-MLE encourages a lot of discussion and conversation of the learners with their peers and also with the teachers. As such discussion progresses, the learners come up with new ideas and knowledge which further strengthens their confidence and also their knowledge base. The MTB-MLE teacher plays a vital role in this regard. The teacher can apply a variety of methods for encouraging meaningful and relevant talking and discussion among the learners. Techniques like discussing in pairs, in small groups, and even the whole class talking, are some of the interesting ways of facilitating learning.

The other important contribution of Vygotzky is his zone of proximal development. It refers to the situation when a learner wants to acquire some knowledge but cannot do so without the help of some other more skilled, or knowledgeable person. That is why it is important that the teachers and facilitators should be able to assist the learner at the right time and with the right kind of input.

In addition to these theories of learning, the theories relating to bilingualism are also worth looking at in order to have an understanding of the current literacy situation among the minority language groups of the world.
3.2 Cognitive theories of Bilingualism

3.2.1 The Balance Theory

This theory claims that in the case of bilingual speakers, the two languages exist together in balance in the brain of the individual. It visualizes the theory in the form of a picture of weighing scales, with a second language increasing at the expense of the first language. An alternative naive picture theory associated with early research is that of two language balloons inside the head. It proposes that a monolingual speaker will have one well-filled balloon, and a bilingual will have two less filled or half-filled balloons. As the second language balloon gets bigger, the first language balloon diminishes in size.

But evidence in this regard suggests that there are cognitive advantages for being bilingual. Certain types of bilingual education programmes such as early immersion and heritage language, bilingual education appear to result in performance advantages compared to submersion or monolingual education.

This balance and balloon picture theory of bilingualism is referred to as the Separate Underlying Proficiency Model of Bilingualism by Cummins (1980a). This model conceives of the two languages operating separately without transfer and with a restricted amount of 'room' for languages.

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7This section draws upon Collin Baker’s *Foundations of Bilingual Education and Bilingualism* (2001)

8An Immersion programme is a programme where linguistic majority children with a high status mother tongue voluntarily choose to be instructed through the medium of a foreign (minority) language, in classes with majority children with the same mother tongue only where the teacher is bilingual, so that the children can at the beginning use their own language, and where their mother tongue is in no danger of not developing or of being replaced by the language of instruction- an additive language learning situation. (Skutnabb-Kangas, Tove 2008)

9A Submersion or sink or swim model is a programme where linguistic minority children with a low-status mother tongue are forced to accept instruction through the medium of a foreign majority/official language with status, in classes where some children are native speakers of the language of instruction, where the teacher does not understand the mother tongue of the minority children, and where the majority language constitutes a threat to the minority children’s mother tongue. (Skutnabb-Kangas, Tove 2008)
But researches have shown that it is incorrect to assume that the human brain has only a limited space for language skills. Actually, the human brain is capable of accommodating more than two languages. Moreover, research over time has shown that the language attributes are not separated in the cognitive system but transfer readily and are interactive. For instance, lessons learnt in the first language can be readily transferred to the other language. The only requirement for such easy transfer is that those languages should be sufficiently developed in the child’s mind. The level of development of the first language, and the corresponding critical thinking skills that come with language development, actually contribute to learning the second language. The more one can articulate thought in the first language, the more that can happen in the second language when the second language is sufficiently developed to express those thoughts.

3.2.2 The Iceberg Analogy
This analogy is the culmination of Jim Cummins (1980, 1981) Common Underlying Proficiency model of bilingualism. This model conceives that in case of bilingual speakers, even though the two languages seem to exist separately at the surface level, at the core level both the languages are processed through a Common Underlying Proficiency. This situation can be pictorially represented in the form of two icebergs which is labeled as Separate Underlying Proficiency (SUP) standing separately above the surface but underneath both the icebergs are fused together into a common iceberg, labeled as Common Underlying Proficiency (CUP). The Figure 1 is an illustration of the SUP and the CUP.

Figure 3: Common Underlying Proficiency and Separate Underlying Proficiency
This Common Underlying Proficiency conceives that a person can operate in different languages through one common source of thought. In other words, the basic literacy skills like listening, speaking, reading, and writing are acquired by the common cognitive system through one language preferably in the children's mother tongue and then it is applied to any other languages. This actually empowers one person to be a bilingual or multilingual depending on the linguistic situation and according to his needs and interest. Another important statement made by this theory is that the language a child is using in the classroom needs to be sufficiently developed to be able to process the cognitive challenges of the classroom. But if the children are made to operate in an insufficiently developed second language, the system will not function at its best. If children are made to operate in the classroom in a poorly developed second language, the quality and quantity of what they learn from complex curriculum materials and what they produce in oral and written form may be relatively weak and impoverished.

### 3.2.3 The Threshold Theory

This theory partially summarizes the relationship between cognition and degree of bilingualism. This theory was first postulated by Toukomaa and Skutnabb-Kangas (1977) and by Cummins (1976). According to this theory, the relationship between cognition and bilingualism can be best explained by the idea of two thresholds. Each threshold is a level of language competence that has consequences for a child. The first threshold is a level for a child to reach to avoid the negative consequences of bilingualism. The second threshold is a level required to experience the possible positive benefits of bilingualism.

This theory can be visualized in terms of a house with three floors. The two ladders placed on the sides of the house represent the two languages that a child will learn. All those whose competence in both languages is not sufficient as expected of their age group, will remain at the bottom floor of the house. These children are unable to cope with the classroom situation and may have negative effect on their cognitive development. At the middle level or the second floor of the house will be those children with age-appropriate competence in one of their languages but not in both. At the top of the house will be those with balanced bilingual capacities. These children will have age-
appropriate competence in both the languages. As a result, they will be able to cope 
with the curriculum materials in both the languages.

This theory explains why minority children taught through a second language 
most of the time fail to develop sufficient competency in their second language. This is 
- because they are not allowed to develop competency in their first language. Therefore 
this hypothesis suggests that a child’s language competency in second language is partly 
dependent on the level of competence already achieved in the first language. The more 
developed the first language, the easier it will be to develop the second language. The 
more the first language is at a low stage of evolution, the more difficult will be the 
achievement of bilingualism.

The theory also touches upon the issue of the distinction between surface level 
fluency and the more academically demanding language skills. Cummins (1979) found 
that everyday conversational language could be acquired in two years, while the more 
complex language abilities needed to cope with the curriculum could take five to seven 
or more years to develop.

Cummins labeled these distinctions in terms of Basic Interpersonal 
Communicative Skills (BICS) and Cognitive/Academic Language Proficiency (CALP). 
BICS refers to everyday conversational fluency while CALP refers to the academic 
ability of the students. In other words, CALP refers to the students’ ability to understand 
and express ideas and concepts required for academic proficiency. Therefore, CALP 
demands more of higher-order thinking skills like analysis, synthesis, and evaluation. 
The distinction between these two types of proficiency was first introduced by 
Cummins (1979, 1981a) to focus on the timelines and challenges that the second 
language learners encounter while trying to catch up with their peers in academic 
aspects of school language.

According to Cummins, children acquire most of the basic language skills such 
as the phonology of the language at a relatively early age. Therefore, they do not seem 
to have any difficulty in the everyday use of the language. At the same time, there are 
some other cognitively demanding aspects of the language which develop through 
social interaction from birth. The difference between these two language proficiencies
becomes evident just after the early stages of schooling. The use of the school language proves to be much more academically demanding than that of the everyday conversational language. Academic language proficiency can thus be defined as *the extent to which an individual has access to and command of the oral and written academic registers of schooling*. (Cummins, 2000)

Therefore, the basic conversational ability of a student does not necessarily predict his or her academic proficiency. There are a number of instances where the children of a particular minority language group can communicate in the school language since this is also their link language. But their underdeveloped academic proficiency gets reflected in their poor performance in the school tests. These students fail as their cognitive academic language proficiency is not sufficiently developed to enable them to cope with the curriculum in the second language. Therefore, it is much important in bilingual education to develop the linguistic-cognitive abilities sufficiently through their mother tongue to get the maximum leverage.

The above survey looked at some of the research findings relating to the acquisition of the first and second language and the benefits of mother tongue education or instruction. Theories relating to the relationship between language, thought and cognition were also touched upon. The findings of such research and theories are relevant to highlight the necessity of mother tongue education for the children of minority language communities all over the world.

### 3.3 Overview

The present chapter looked at developmental learning theories on the one hand, and with cognitive theories of bilingualism on the other. Such a survey has been considered necessary in terms of the necessity for theoretical support and rationale for adopting an approach to multilingual education that draws upon the mother tongue as a base and as a resource for children. All the theories subsumed under the two broader categories, namely, Developmental Learning theories and the Cognitive theories of Bilingualism make a case for the necessity and usefulness of the mother tongue in the cognitive
development of children from ethnic minority groups. They reinforce the necessity of a familiar and non-threatening atmosphere for an effective learning process.

The second part of the present work seeks to relate the MTB-MLE programme to the specific context of the Singpho community. The series of six chapters of Part Two (Chapter 4 to Chapter 9) is based on the practical experience of the researcher in implementing the different components of the Singpho MTB-MLE programme. Thus, the theoretical and conceptual orientation of Part One is intended as a supporting background to the more localised and practical point of view presented in Part Two in the Singpho context.