The First Language (L1) or Mother Tongue Model Vs. The Second Language (L2) Model of Literacy Instruction

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Abstract

In several developing countries with linguistic minorities where the colonial language is preferred for educational purposes, curriculum content is often presented in a language unfamiliar to a significant portion of children beginning school. When the language used for instruction is not understood, pupils do not have the opportunity to learn, and therefore neither able to understand the content nor to interact with it by participating in class. Researchers raise concerns that those children who do not acquire adequately the language used for instruction will faced difficulties in becoming fully literate (McLaughlin, 1984; Collier & Thomas, 1989; Collier, 1992, 1995; Collier & Thomas, 1995). In order to avoid this situation, children should learn the language used for instruction before learning basic literacy skills in it. Otherwise, pedagogical practices should be conducted in the mother tongue to support the initial stages of their literacy development. Bringing language theories and research findings in literacy development together, this paper advocates for a mother tongue-oriented approach to classroom practices related to literacy acquisition and claims that adequate pedagogical support in the pupil’s first language (L1) is crucial during the early acquisition process of literacy skills.

Keywords: Literacy skills, language instruction / acquisition, linguistic minorities

Key Terminology

In this paper, we will frequently refer to the mother tongue with the term first language (L1), indicating the child’s native or first acquired language. We will also refer to the second language as L2: this is the language other than one’s mother tongue being learned or studied in its environment, for example the country or the region where the language is mainly spoken. In the examples and case-studies presented in this paper, the second language is used for the purpose of instruction.

Finally, FL refers to the foreign language learned or studied outside its environment.

This terminological distinction is important because there are key differences – with consequential major teaching implications – between L1 and L2 or FL learning.²

Education systems inattentive to mother tongue languages different from the second language (L2) used for instruction have not provided opportunities for acquisition of the L2 before literacy development, nor have given necessary support in learning literacy basic skills in the child’s mother tongue. Interdisciplinary studies concerning language planning and policy in Sub-Saharan Africa (Bokamba, 1991; Kamwangamalu, 1997;

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²It is important to note that the distinction between L2 and FL is not universally recognized, especially in the US. (Crystal, 2008)
Harris, 2012) suggest that these systems have been failing to educate children effectively, denied them access to a quality education and to working life, and ultimately wasted precious time as well as countless energy. Children from ethno-linguistic communities with access to education do not speak nor understand the official language used for instruction by the time they begin primary school. Being communicatively competent only in their mother tongue – not used in the classroom as a foundation for developing literacy skills – the official language represents a L2 to be learned while acquiring the literacy foundation.

Learning about literacy, however, is a continuous process that begins in the very early years, even prior to primary school. Both reading and writing are established most readily on a foundation of good spoken language, therefore linked to the early oral language and social interaction (O’Connor, Notari-Syverson, & Vadasy, 2005). Significant lines of evidence from current research suggest that children’s literacy development begins long before children start formal instruction in primary school (Holdaway, 1979; Teale & Sulzby, 1986; Clay, 1991; Allington & Cunningham, 1996; Burns, Griffin, & Snow, 1999; Hall & Moats, 1999), especially when nourished by social interactions with caring adults. Therefore, children from ethno-linguistic communities start their primary school facing a disadvantaged linguistic situation, which may undermine their later literacy development with lasting - and often permanent - consequences.

If compared to those children communicatively competent in the official language used for instruction, children from ethno-linguistic communities lack the linguistic skills necessary for the acquisition of the foundation in literacy, regarded as the most critical academic task in primary school (O’Connor, Notari-Syverson, & Vadasy, 2005). For these disadvantaged children, learning the new language used for instruction while acquiring basic literacy, has so far proved ineffective, as learning a L2 is “a cognitively challenging and time-consuming activity” (Tabors, 1997, p. 81) and simply being exposed to the L2 input does not guarantee that acquisition is taking place.

Linguistic theories on Second Language Acquisition (SLA) will help delve into the linguistic reasons of this educational problem. According to Krashen’s Input Hypothesis (1985), L2 is acquired processing comprehensible input that is, input that has been listened to and understood. If not understood because way beyond the level of the student, that input proves useless. For acquisition to take place, the input has to be superior to the level of the learner (i+1), but also comprehensible.

Beside the importance of a superior and comprehensible input, the L2 acquisition and learning may also occur through the production of language, allowing L2 learners to identify gaps in their linguistic knowledge and subsequently attend to relevant output.

Providing L2 learners - in our specific case pupils from ethno-linguistic communities - with superior but comprehensible input, as well as offering them adequate opportunities for output, is to make pupils understand, speak, read, and write the new language used for instruction in early school years would be extremely time-consuming. This process would waste valuable time-on-task and eventually leave pupils at a significant disadvantage, compared to pupils whose L1 happens to be the same as the L2 used in their schools for instruction.

In addition, the cognitive difficulties children may experience as they acquire a L2 would require pupils a significant amount of effort. Research on brain science with implication for teaching first, second, and foreign language has contributed to the understanding of the complexity of the L2 learning process.

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3 The term Second Language Acquisition (SLA) refers to the process through which one or more second or foreign languages are acquired.

4 The Output Hypothesis as proposed by Merrill Swain seeks to rectify the assumed inadequacies of the Input Hypothesis proposed by Krashen, focusing solely on the necessity of a comprehensible input. By addressing the importance of the language production for L2 acquisition, the Output Hypothesis hypothesizes a loop between input and output, by positing that both input and output are necessary for language acquisition and learning. (Swain, 1993, pp. 158-164; Swain & Lapkin, 1995; Ellis, 1993).

5 Time on-task - also known as engaged time - is the amount of time actually spent learning (Slavin, 2003).

6 Since reading and writing are thinking processes (Allington & Cunningham, 1996; McGee & Richgels, 1996), emergent literacy must be also considered in the context of children’s developing cognitive skills.
Recent studies on brain science suggest that delaying exposure to a language \(^1\) leads the brain to use a different strategy, with bilateral activation rather than unilateral, when processing grammar\(^7\) and \(^2\) requires social interaction with other target language speakers for detecting the different phonemes, thus learning the different sounds\(^8\). This has clear implications for children who need to learn the official language used for instruction, as a bilateral brain activation may cause a harder, slower, and sometimes inefficient way of learning, with the risk of a poor performance on grammar tasks. In addition, social interaction with native speakers may be difficult to take place, with negative consequences for their phonemic awareness, crucial to identify individual speech sound in spoken words.

By acknowledging the crucial role of social interaction, also the interaction theorists (Long, 1985; Pica, 1994; Lightbrown & Spada, 1999)\(^9\) have contributed to the understanding of the complex dynamics involved in learning a L2. This process requires a sequence - time -, a structure - order or path of learning- and a final state.

The learner must overcome four problems, which appear and have to be solved also at the same time with his knowledge of the world, the situation, and the contextual information: 1) **Analysis**: the learner must segment acoustic signals and compare them with the information he has from the context; 2) **Synthesis**: the sounds and words understood have to be joined to understand and produce enunciates in the L2; 3) **Embedding**: those enunciates have to be identified in the situational and linguistic context; 4) **Matching**: the learner compares his linguistic variety with the target language.\(^10\)

Conversational interaction may facilitate this elaborated process, by increasing input comprehensibility (Long and Robinson, 1998) under certain conditions. For example, when learners are required to engage in meaningful activities and are obliged to “negotiate for meaning” (Lightbrown & Spada, 1999, p.122), using a variety of conversational modifications - such as repetition, clarification, and confirmation checks - to gain understanding (Pica, 1994).

In sum, the exchanges of comprehensible input and output have an enhancing effect, as long as pedagogical practices for L2 learning are designed to provide not only interaction, but also opportunities for pupils to negotiate meaning and use support structures.

Based on this theoretical premise, a significant amount of time and effort would be required for children from ethno-linguistic communities to learn the language used for instruction.

Besides the above mentioned SLA theories and teaching implications from research on brain science shedding light on the complexity of the L2 learning process, a significant body of academic research in the fields of cognition (Gee, 2004; Heath, 1983; Watson, 2001) and literacy development (Vygotsky, 1962, 1978; Teale, 1984; Roth, Speece, Cooper, & De La Paz, 1996; Dickinson, McCabe, & Essex, 2006) has contributed to a clearer understanding of the process involved in becoming literate. The view of these studies considers literacy not only as a linguistic activity, but also as a complex sociological and psychological one. Starting from the mid-1980s, researchers and educators revised their view about literacy learning (O’Connoer et al., 2005) considering it as an integral part of everyday living (Teale, 1984). Based on this view, the interactive relationship between language and cognitive growth is very important, so a stimulating and rich linguistic environment in the L1 is considered as crucial for language development.

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\(^7\)Research with electroencephalogram (EEG) conducted by Helen Neville has shown that grammatical processing activates the left hemisphere only. After the sensitive period for learning grammar - between one and three years of age - however, similar regions in the left and right hemisphere are activated, leading the brain to an unusual and harder learning process. (Blakemore & Frith, 2012, pp. 44, 45)

\(^8\)A recent study by Patricia Kuhl shows that sound learning for infants later than nine months - identified as the sensitive period - occurs only if the new sound comes from a real person - not a recorded sound - interacting with the child. (Blakemore & Frith, 2012, p. 40)

\(^9\)By stressing the importance of the two-way communication, the interactionists (Long, 1985; Pica, 1994; Swain, 1993, 1995) take a step forward from Krashen (1985), who believes that only one-way comprehensible input is required for SLA.

Therefore, both engaging and encouraging children to express themselves interactively is an effective way to build language experience (McLaughlin, 1984; Cuevas, 1996), and strengthening the L1 while acquiring the basic literacy in it supports the continuity of cognitive growth.11

Such a conclusion reflects the social-interactionist perspective12 (Vygotsky, 1978) which emphasizes the role of scaffold interaction with adults in the pupil’s literacy learning process. The classroom practice of scaffolding13 (Tharp & Gallimore, 1988), in which teachers guide and support the child’s learning by building on what the child is able to do, is not applicable to pupils with no knowledge of the language used for instruction, because they are not functioning at the same developmental level as the pupils who are proficient in the language.

L1 development seems the key for accessing literacy and by highlighting how language and literacy learning are situated, research has confirmed that a high level of literacy and language development may take many years and require constant training.14

If literacy education is given special attention and pedagogical support in the mother tongue is provided when the L1 is not the language of instruction, competences in reading and writing may rise considerably. A successful example is the language policy promoted by the Zambian Primary Reading Program (PRP), initiated by the Zambian Ministry of Education in 2000. Pupils were encouraged to read and write initially in their local familiar languages; which successively helped them transfer the reading skills to the English language. This approach proved effective for learning literacy, as the reading and writing levels of children in the first year of primary schools recorded an improvement of 780 percent, allowing them to perform effectively in all subjects across the curriculum.15

A significant body of research conducted internationally (Bradley & Bryant, 1983; Share, Jorm, Maclean, & Matthews, 1984; Perfetti, Beck, Bell, & Hughes, 1987; Torgesen, Wagner, & Rashotte, 1994; Juel, 1998) endorses this practice and suggests that it is possible to intervene with pedagogical support in the mother tongue. The Scandinavian countries provide an excellent example of education systems having implemented intervention programs with scaffolding approaches used successfully to teach literacy skills in the child’s mother tongue. Among them, Sweden has identified literacy as key to both integration and working life. Pupils of languages other than Swedish receive study guidance in their stronger language until they are ready to learn other subjects in Swedish.16

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11 When children, teachers, and parents use their L1 - in most of the cases the language they know best - cognitive development is not interrupted. On the contrary, when children are required to learn all new information and skills in the L2, their L1 cannot keep pace with the new knowledge. Supporting only the L2 may 1) lead to a “Limited Bilingualism”, where children lose their L1 becoming “Subtractive Bilinguals”, and 2) give them the impression that a different language or culture is not valued, which eventually prevents them from becoming proficient in either their L1 or L2. (Ramsey, 1987; Saville-Troike, 1982; Collier, 1992)

12 Vygotsky’s theories are relevant to the discussion of emergent literacy and help explain the cognitive concepts formed by young learners. Emergent literacy is based on behaviors modeled and supported by adults encouraging children to change and refine their own ideas to more closely match conventional notions. (Vygotsky, 1978)

13 Wood, Bruner, and Ross (1976) introduced scaffolding as a metaphor to describe a process observed in interactions taking place between parents and children. During the process of scaffolding, the adult guides and supports the child’s learning by building on child competence and individual characteristics. Later on, the notion was applied to classroom practice (Tharp & Gallimore, 1988) and language intervention (Norris & Hoffman, 1990).


Keeping in mind the approach followed by the Scandinavian countries - and specifically the Swedish example\footnote{Schleppegrell, M.J. (2004) The Language of schooling: A functional linguistics perspective. Mahwah, NJ: Lawrence Erlbaum.} - a mother tongue based instructional model could be applied in developing countries with linguistic minorities, with basic literacy education facilitated successfully in the children's stronger language.

Such a model focuses on the importance of language and literacy development during primary school years and may be based on the necessity of a language understood by all pupils entering the education system.

In the next section, we will attempt to bring together language theories and research findings in literacy development, in order to advocate for a mother tongue-oriented approach to classroom practices associated with literacy acquisition and early development. Research highlights will be supported by two specific case-studies. From the analysis of each case will emerge that: 1) the L2 model - still persisting with enthusiastic support from national educational policy makers and much of the international community - is not effective and 2) a mother tongue-based literacy education may be beneficial to children from ethno-linguistic communities.

As we will see, a consistent body of literature documents the failing results of educational programs in developing countries, in which the L2 model has been applied and the importance of the L1 as a variable shaping educational outcomes has been largely ignored.

So far, the educational outcomes of literacy programs advocating the use of one single "official" language in multilingual environments have been very disappointing, as the desired expectations have not been met, despite the high cost for implementation. The conditions for pedagogical success of an L2 learning model where a single "official" language of instruction is used are that the language of the classroom is either well known or quickly learned by students, but it barely happens that either of these two conditions is fulfilled.

Two scenarios of low-level literacy will be presented in the next paragraphs for further analysis: 1) a case-study conducted in the north-western area of Cameroon and 2) a research investigation conducted in the US educational system.

1.1 The North-western Cameroon Case-study

In the north-western area of Cameroon, Kom is the primary language spoken, but English is the language of instruction in local schools. The fact that the L2 is the foreign medium of instruction poses common problems of comprehension and expression.

Oral and written communicative exchange is reduced to "safe talk"\footnote{Chick, J. K. (1996). Safe talk collusion in apartheid education. In H. Coleman (Ed.), Society and the language classroom (pp. 21-39). Cambridge, UK: Cambridge University Press.} - a term referring to classroom interaction practices such as rote learning or repetition - at the detriment of active, deeper learning that cannot take place in the classroom. Negative consequences of it influence not only pupils lacking the language competence to understand what the teacher says, but also teachers who often face language difficulties themselves, as only have passable proficiency in the designated language of instruction. In this scenario of low-level literacy, children can succeed in the classroom only to the extent that they quickly master the L2 used for instruction and can follow the teacher directions.

A deeper exploration of the case-study - with insights on the interaction between linguistic complexity, diversity, and educational outcomes - will help better understand the reasons of this failure.

In 2007, an experimental research\footnote{Walter, S.L. (2007). Mother tongue based education in developing countries: Some emerging insights. (GIAL/ SIL). Retrieved April 26, 2013 from http://www.globalpartnership.org/ media/ library/ blog/ Steve-Walter-Mother- TongueInsights.pdf} was carried out by Stephen L. Walter, literacy and education consultant for SIL International\footnote{SIL International (www.sil.org) is a faith-based nonprofit organization committed to serving language communities worldwide by helping them build capacity for sustainable language development.}. The research was set up with an experimental project of twelve (12) experimental schools in which the mother tongue was the language of instruction and twelve (12) matched control...
schools in which English (L2) was the language of instruction. In the experimental schools, children were taught English as a subject for approximately three (3) hours a week, while in the control schools children were exposed to twenty-two hours and thirty minutes (22.5) of English a week of assigned instructional time, as all instruction was delivered in English.

Children in both programs took the same final proficiency assessment in oral English. Assessments gathered during the last five (5) years of the program indicate that students in the Kom mother tongue program scored better in almost every measure of student progress. In contrast, students in the study's twelve English-medium comparison schools were struggling to learn to read. The results of this experimental research will be even more significant if we re-construct the learning process followed by the two groups of pupils: while students in the Kom mother tongue were learning to read, and at the same time becoming proficient in their L1; students in the L2 used for instruction - English - were carrying on two different and unrelated tasks: learning an L2 and the skill development of reading it.

The reading skill development in a L2 is only possible after appropriate scaffolding takes place to ensure that children have sufficient knowledge and academic vocabulary. A transition from learning in the L1 to learning (and being assessed) in the L2 is indeed possible, but in order to be effective should take place gradually. Basic skill (e.g. reading and writing) instruction in the L2 needs to be systematic and explicit.21

Since this process can take several years of schooling, the most positive and constructive policy recommendation stemming from this example is that curricula, materials, and instruction must support children learning in the L1, at least during the initial stages of literacy acquisition.

This view, however, may be objected on the ground that competency in a L2 and/or foreign language (FL) is an excellent mean to find a good, future occupation. Many parents, for example, may be concerned that the early literacy development in the L1 hinders their children's opportunity to learn a foreign language, which is often the key goal of sending them to school.

1.2 The Investigation conducted in the US Educational System by Thomas & Collier

Thomas and Collier (1997) originally started their research around this preoccupation. The investigation was conducted in the US educational system and contrary to conventional wisdom, its empirical findings indicated that children receiving as much as six (6) years of instructional support in their mother tongue not only finished their formal education at a higher level than those submerged in English only programs, but they also achieved a greater level of proficiency in English.

While the research of Thomas and Collier was based entirely upon data drawn from US schools, the same hold true in developing countries where teachers were less sophisticated and technical support was much more limited, as demonstrated by the research conducted by Walter in Cameroon. Both local parents and educators were surprised to know that the children in their L1-based classrooms, using Kom as language of instruction, outperformed their peers in their L2-based classrooms, using English as language of instruction, where they were exposed to listening to English for more than twenty (20) weekly hours.

We can therefore conclude that the instructional arrangement of the Cameroon mother tongue educational program had not hindered the children's English ability. In fact, such a model of instruction had proven beneficial for some teachers, who were able to focus on high-quality instruction of concepts in a familiar language without the obligation of becoming proficient at teaching in the L2.

21Important language teaching implications based on Krashen's (1987, 1988) SLA hypotheses suggest that language development does not only take place through acquisition, a subconscious and natural process, part of the overall development of the physical, social, and cognitive child development. Although criticized as partially questionable, Krashen's hypothesis about second language acquisition and learning contribute to delve into this linguistic issue: by the time they reach school-age, children naturally obtain a communicative competence in their mother tongue, but this does not hold true for a L2 they learn at a later stage, upon entrance to primary school. The communicative competence in the L2 is reached through learning, mainly a conscious process consisting of reflection and systematization of language structures and rules. (Krashen, 1987, 1988).
Finally, if one of the country’s education goal is that children become proficient also in an official L2 or in a FL by the end of basic education, this language does not necessarily need to be the medium of instruction. Several countries (Cameroon, India, Mali, the Philippines, South Africa, Vietnam) found an optimal condition encouraging children become proficient in their L1, while offering high-quality instruction in a L2 or FL taught as a subject. In this way, pupils may become fluent in the L2 or FL during the critical stage of their cognitive development by focusing on the complexity of the learning process itself; while avoiding the burden of learning literacy in a language they do not master yet, which may be extremely detrimental for their later literacy development.

**Conclusion**

Evidence from research and practice highlighted in this paper confirms that when the mother tongue continues to be supported during the initial stages of literacy acquisition, introducing a L2 - the official language of instruction - does not hinder the full cognitive growth in the L1 nor in the L2.

In fact, as we have seen in the examples from the Primary Reading Program in Zambia and the mother tongue intervention programs in Sweden, as well as the findings from the research conducted in the US schools, it is possible to implement intervention programs to guarantee children’s literacy growth through interaction and classroom practices in the mother tongue.

Such a model of literacy instruction would offer a pedagogically grounded and positive learning atmosphere, where learners and teachers would feel more comfortable with the overall language use. Further studies - particularly from brain research - would be crucial in endorsing this view: a positive atmosphere is a prerequisite for learning, and success in learning enhances self-esteem and motivation to attend school, which in turn would lead to motivation to be a responsible and productive citizen in the country.

**Reference List**


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