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Written by
Young Mee Kim
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has been read and approved
by the undersigned members of the faculty
of the Graduate Institute of Applied Linguistics

_____
Stephen Walter (Mentor)

_____
Pete Unseth

_____
Dennis Malone

_____
Date

DEVELOPMENT OF A NATIONAL LITERACY ASSESSMENT INSTRUMENT FOR CROSS-LINGUISTIC USE IN NEPAL

By

Young Mee Kim

Presented to the Faculty of
the Graduate Institute of Applied Linguistics
in partial fulfillment of the requirements
for the degree of

Master of Arts
with major in
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ABSTRACT

Development of a National Literacy Assessment Instrument

For Cross-linguistic Use in Nepal

Young Mee Kim
Master of Arts
with major in
Language Development
The Graduate Institute of Applied Linguistics, June 2011

Supervising Professor: Stephen Walter

This thesis presents a criterion-referenced assessment instrument to measure literacy performance proficiencies of Eastern Tamang adult learners, which can be adaptable for other indigenous language groups of Nepal. Following introduction of Nepal, Tamang, and a brief history of Non-Formal Education in Nepal, chapter 2 reviews various methods and models to establish a theoretical framework for developing literacy assessment in Nepal. Chapter 3 proposes general guidelines for an assessment development procedure, an operational definition of literacy, specific literacy skills and test components selected, and minimum skill levels posited as criteria for success for the Eastern Tamang adults. Chapter 4 describes the assessment instrument which mainly consists of an entry point diagnostic, oral, and written tests with different test items for different skill levels. Chapter 5 provides a broad methodological sketch of all the phases of developing the assessment and finally chapter 6 summarizes the motivation and justification of the literacy assessment.

Dedicated to the Eastern Tamang people and
all the literacy practitioners who have been working in Nepal.

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I could not have done with this thesis without help from various people. First of all, I would like to acknowledge the contributions of local and expatriate literacy practitioners who have worked or have been working in Nepal in gathering information of history of mother tongue adult literacy programs.

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ABBREVIATIONS

ACCU	Asia/Pacific Cultural Center for UNESCO
AES	Adult Education Section
AK	Alphabet Knowledge
APL	Adult Performance Level
ARNEC	All Round National Education Committee
ASRP	Assessment Strategies and Reading Profiles
BASE	Backward Society Education
BLC	Basic Learning Competencies
BPEP	Basic and Primary Education Project
BS	Bikram Sambat (A lunar calendar of Nepal)
CARE	Cooperative for Assistance and Relief Everywhere
CBO	Community-Based Organization
CDC	Curriculum Development Center
CERID	Research Center for Educational Innovation and Development
CIDA	Canadian International Development Agency
CLC	Community Learning Center
DEO	District Education Office
DIBELS	Dynamic Indicators of Basic Early Literacy Skills
EA	Education Act
ECD	Early Childhood Development
EGMA	Early Grade Math Assessment
EGRA	Early Grade Reading Assessment
ET	Eastern Tamang
ETLT	Eastern Tamang Language Team
ETS	Educational Testing Service
FRS	Functional Reading Study
GOs	Governmental Organizations
GoN	Government of Nepal
HEC	Higher Education Commission
HIS-Nepal	Himalayan Indigenous Society-Nepal
HS-Nepal	Help Society-Nepal
INGOs	International Non-Governmental Organizations
IALS	International Adult Literacy Survey
JICA	Japan International Cooperation Agency
LAMP	Literacy Assessment and Monitoring Program
LEA	Language Experience Approach
LiLDA	Limbu Language Development Association
LDC-Nepal	Language Development Center-Nepal

LSUDA	Literacy Skills Used in Daily Activity
MoE	Ministry of Education
MT	Mother Tongue
NAAL	National Assessment of Adult Literacy
NALS	National Adult Literacy Survey
NEC	National Education Commission
NELP	National Early Literacy Panel
NESP	National Education System Plan
NFE	Non-Formal Education
NFEC	Non-Formal Education Center
NGOs	Non-Governmental Organizations
NNEPC	Nepal National Education Planning Commission
NNLPI	Nepali National Languages Preservation Institute
NRC-NFE	National Resource Center for Non-Formal Education
OECD	Organization for Economic Cooperation and Development
PA	Phonological Awareness
PACT	Private Agencies Collaborating Together
PEP	Primary Education Project
PRA	Participatory Rural Appraisal
REFLECT	Regenerated Freirean Literacy through Empowering Community Techniques
SATA	Swiss Association for Technical Assistance
SC-Nepal	Save the Children – Nepal
SQC	Smaller/Quicker/Cheaper
3 Rs	Reading, writing, and arithmetic
TEVT	Technical and Vocational Training
UIS	UNESCO Institute of Statistics
UNESCO	United Nations Educational, Scientific and Cultural Organization
UMN	United Mission to Nepal
UNICEF	United Nations International Children's Emergency Fund
USAID	United States Agency for International Development
USC	Unitarian Service Committee
UMN	United Mission to Nepal
WE	World Education

1 INTRODUCTION

During my extended stay (1993-1995, 1997-2000 and 2002-2005) in Nepal, I observed that literacy in Nepali life is much more than the ability to read and write. It is an avenue for obtaining higher education and a better life, as well as a critical tool of self-consciousness and social and economical empowerment of human resources. Thus, increasing literacy among its population through formal and non-formal education has been a critical goal for Nepal as well as for other developing countries. Since 1950, the government of Nepal has developed language and educational policies and a range of strategies designed to achieve the goal of increasing the national literacy rate.

However, progress has been slow and little work has been done to develop standards for literacy levels and ways to measure these. How do Nepalese learners and other stakeholders of a literacy program know whether actual literacy skill development takes place in a program? How can they judge the current status of literacy skills among adult learners? Vella et al. (1998:11) propose that evaluation should be like checkpoints of an educational journey, making it possible to determine whether the journey is progressing in a way that meets the needs of the planners as well as the learners. According to their broad view (ibid.:12), evaluation is "an integral part of a learning experience – as important at the beginning and throughout the experience as it is at the end." They assert that evaluation is "a tool for continual improvement; … part of the education program, helping ensure the success of the learning experience through

ongoing feedback rather than relying simply on making a final judgment."

As a literacy practitioner involved in mother tongue (MT) adult literacy work in Nepal, I have observed the lack of objective literacy assessment instruments either in Nepali or the various MT languages of Nepal. Rather, planners and evaluators have relied on self-reports of each project which typically do not provide an accurate picture of individual and national literacy achievement. Most assessment has focused on behavioral or attitudinal changes of Nepalese learners as a result of an adult literacy program. Only a few literacy research studies have sought to measure the literacy skills of adults in Nepali and none in the indigenous languages of Nepal.

In this study, therefore, I propose to build a foundation for developing a national adult literacy assessment instrument for cross-linguistic use in Nepal by means of

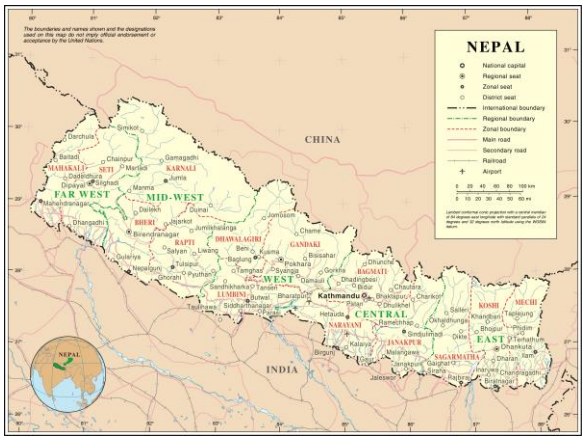
1) identifying the key elements and performance levels of adult literacy skills in the context of Nepal;
2) establishing a set of principles for MT-based adult literacy assessment; and
3) devising the first draft of a sample literacy assessment instrument for the Eastern Tamang MT-based adult literacy program in Nepal.

This chapter provides background information on Nepal and the Eastern Tamang people. It also gives a brief overview of the state of non-formal education (NFE) in Nepal.

1.1 Nepal

The Federal Democratic Republic of Nepal[1] is a country in South Asia which shares a border to the north with Tibet in the People's Republic of China, and to the east, west, and south, with the Republic of India. Nepal with its capital, Kathmandu, is a mountainous country with an area of 147,181 square kilometers, a population of 29,391,883 (July 2011 estimate)[2] of which ninety percent live in rural areas, and a per capita gross domestic product of $427 (2009 estimate).[3]

Figure 1: Map of Nepal[4]



Nepal is divided into fourteen zones and seventy-five districts that are grouped into five development regions. In this landlocked country, there are three distinct ecological regions extending the length of the country in an east-west direction: the

[1] The official name of Nepal has been changed since May 28, 2009. It was previously the Kingdom of Nepal.
[2] This information comes from the web site of the World Factbook of the Central Intelligence Agency, https://www.cia.gov/library/publications/the-world-factbook/geos/np.html (Retrieved on April 21, 2011).
[3] This information comes from the website of GDP per capita of the World Bank, http://data.worldbank.org/indicator/NY.GDP.PCAP.CD/countries (Retrieved on April 21, 2011).
[4] This map is retrieved [April 27, 2011] from the web site of the United Nations Cartographic Section, www.un.org/Depts/Cartographic/map/profile/nepal.pdf.

Himalayan mountain ranges and high plateau, the Hill region with its fertile valleys, and the Terai region. Most of the inhabitants in the highest mountain zone in the north are Tibeto-Burman speakers. The numerous high hills and fertile valleys lie south of the high Himalayas and make up the central region of Nepal. The lowland plain region, the Terai, extends from the Indian border to the bottom of the foothills. Because of its topography, adequate water supply, the relative ease of transportation, and warmer weather, the Terai has become a popular area for extensive agricultural and/or industrial development, and subsequent migration (Eagle, 2000:5).

Nepal is a multilingual and multicultural country. There are 332 ethnic groups[5] speaking 124 different languages[6] in Nepal. These languages can be classified into four different language families: Austroasiatic, Dravidian, Indo-European (Indo-Aryan), and Sino-Tibetan (Tibeto-Burman branch). The first two language groups have relatively small numbers of speakers. The Indo-Aryan group has the largest number of speakers in Nepal, followed by the Tibeto-Burman group which has a larger number (36) of the major languages in Nepal than Indo-Aryan (14) (Eagle, 2000:8). The national language of Nepal is Nepali which belongs to the Indo-Aryan language group and is spoken by 48.6 % of the population. The other major languages which are spoken as mother tongues in Nepal are as follows: Maithili (12.30%), Bhojpuri (7.53%), Tharu (5.86%), Tamang (5.19%), Newari/Nepal Bhasa (3.63%), Magar (3.39%), Awadhi (2.47%), Rai (2.79%), Limbu (1.47%), and Bajjika (1.05%). The national literacy rate is 59.5%: 72% for males

[5] The information is based on the data of Joshua Project-Unreached Peoples of the World: Nepal-People group. http://www.joshuaproject.net/countries.php?rog3=NP. Retrieved on Sept. 4, 2010.

[6] Referring to the Ethnologue, 2009, there are two other Nepali languages, but there are no known speakers in Nepal.

and 46.9% for females (UNESCO-UIS, 2010).

1.2 Tamang

Tamang is the fourth largest minority language group of Nepal with a population of over one million. The word "Tamang" is used to identify the ethnic group as well as the language which is a member of the Tibeto-Burman family. The history of the Tamang people can be traced mostly on the basis of their oral traditions and some Nepalese history, but very little has been recorded and known definitely.

Generally speaking, there are two different theories of Tamang origin. One is that the Tamang may have been the first inhabitants of the Kathmandu Valley but were dislodged by various invaders. The other one is that the Tibetan king, Songtsen Gampo, came down with an army from Kyirong in Tibet via the Bhote Kosi valley to the Kathmandu Valley in the mid-seventh century and became the ancestors of the Tamang. Traditionally, the Tamang were traders of salt coming from Kyirong. Tamang living in the Langtang region travel freely over the border and trade regularly (Fricke, 1994:29; Varenkamp, 1996:10). Heavily influenced by Tibetan culture, most Tamang identify themselves as Buddhists (Lama/ Tibetan Buddhists) although their religion is a complex mixture of Tibetan Buddhism, Hinduism, and Animism.

While Tamang people can be found in all 75 districts of Nepal from the highlands all the way down to the subtropical Terai, the greatest number are found in the three districts surrounding Kathmandu Valley: Makawanpur (185,874), Kavre-palanchok (130,261), and Nuwakot (111,112). A small number of Tamang are found in the three districts which make up the Western Regions of Nepal: Jajarkot (15), Argha-khachi (15),

and Rukum (18) (Thokar, 2008:393).

Glover (1974:12-13) classified the Tamang language into the Gurung group on the basis of Shafer's classification and noted that Tamang is closely related to Gurung, Thakali, Manangi, and Tibetan. Mazaudon (2003:291) and Thokar (2008:401-402) identified this group as the Tamang-Gurung-Thakali-Manang (TGTM) cluster which includes Tamang, Gurung, Thakali, Manangpa, and the Nar-phu dialects, Chantyal, and Tangbe in the Mustang zone.

Broadly speaking, the Tamang language has two distinct dialects: Eastern Tamang with 759,000 speakers and Western Tamang with 323,000 speakers (Lewis, 2009:495-496). The two dialects are mutually unintelligible and may legitimately be referred to as separate languages. According to the sociolinguistic survey of Varenkamp (1996:45 and 81), the Tamang language can also be divided into three different linguistic groups: Central-Eastern Tamang, Outer-Eastern Tamang, and Western Tamang. The Central-Eastern Tamang language is the most widely understood dialect among all tested to date (ibid.:495).

There has been recognition of the need for standardization of the Tamang language among Tamangs, but at the same time, they want to respect all the varieties and do not want to exclude or diminish the importance of any. Amrit Yhonjan-Tamang and Parshuram Tamang expressed their concerns about standardization as follows:

> "Every dialect will have its own importance and speakers, and every speaker should continue the written tradition in their respective area. If we can do this, the pure appearance of the Tamang language will appear, and there will be gradual development toward a standard form. If the language does not develop toward a standard form, the development of the language cannot attain great heights. To be able to be used in all domains of scientific knowledge, its development is of great

> importance. My wish and desire is that a standard form of the language should be developed…" (Yhonjan, quoted in Varenkamp, 1996:31).
>
> "In [the Tamang] case…, there is only one language, even though there might be a number of different dialects. This common language we have to develop and cultivate. But in doing so, we are trying not to favour a certain dialect above the others. All members of the Tamang people should be able to call this language their own. Therefore, we are eager to let the dialects of all social groups merge into that one language" (Tamang, Nepal Tamang Ghedung's Secretary General, in an interview given in 1995, quoted in Varenkamp, 1996:31).

It is possible that de facto standardization will happen naturally without any specific plan as long as Tamang scholars and language planners keep producing materials in their dialects.

By and large, Tamangs are engaged in agriculture and livestock farming. Historically, they were tenant-farmers, daily laborers, and carriers. It is said that Tamangs were the only ethnic group that had been required to stay in and around Kathmandu to be available for enlistment in the Nepali army. They could not join the Gurkha army to go abroad for economic gain, but could lend land for farming with the special exemption of taxes. That is partly how they became poorer and less educated compared to other Tibeto-Burman language speaking ethnic groups who could join the Gurkha army.

In urban areas like Kathmandu, Tamangs also engage in various occupations such as porters, carpet weavers, tempo[7] and taxi drivers, and Thanka painters/artists, and a few are found as teachers, lawyers, pastors, and professors.

In the rural areas outside the Kathmandu Valley, most Tamangs are living mixed with Bahuns, Chhetris, Newars, Magars, Gurungs, or other ethnic peoples, and comprise

---

[7] A tempo is a three-weel motor vehicle which is used as a public transportation in Nepal.

the majority of the population even though there are few exclusively Tamang villages. Despite the substantial cultural diversity within and around the Tamang language community, they have maintained their ethnic identity via their language, culture, and religion. They maintain the unique kinship system through preferential bilateral cross-cousin marriage and clan membership is an important element of their ethnic identity (Varenkamp, 1996: 9; Thokar, 2008). Unlikely other high castes, the clan system of the Tamang is not structured hierarchically. Rather, as Fricke (1994:31) noted, the Tamang are an extraordinarily egalitarian people with no institutionalized basis for distinguishing the status of clans.

The main religions of Nepal are Hinduism (81%) and Tibetan/Lama Buddhism (11%). Other minority religions are Islam, Christianity, and various traditional religions.[8] Most Tamangs say they are Lama Buddhists.

The Tamang language community has been successful in the transmission and use of their mother tongue. The language seems likely to maintain its vitality in spite of increasing education in Nepali and English, and the various challenges related to dialect differences and standardization.

1.3 Brief Overview of Non-Formal Education (NFE) in Nepal

1.3.1 Adult NFE in Nepali

> "Adult literacy and adult functional literacy programs are generally called Non-Formal Education. Non-Formal Education (NFE) is a new label for an old

[8] This information comes from the web site of the U.S. Department of State, Bureau of South and Central Asian Affairs. October 2009. Background Note: Nepal. http://www.state.gov/r/pa/ei/bgn/5283.htm. Retrieved on July 7, 2010.

> collection of activities and is the term used to refer to almost all adult literacy programs in Nepal" (Kehrberg, 1996:4).

Historically, Nepal had an official policy of one language, one culture, and one religion (Hinduism) for 240 years from the middle of the 18th century until 1990. During this period, the official slogan was "One king, one country, one language, one culture" to propagate the use of the Nepali language and the Hindu culture of the ruling elites. All indigenous languages and cultures were banned (Hough et al., 2009:160).

In the early 18th century, the Shah-king of the Khas state of Gorkha, Prithvi Narayan, first united several disparate western kingdoms and then the split kingdom states of the Malla kingdom of Kathmandu Valley. Thus, the two countries, Gorkha and Nepal, were united creating the current nation of Nepal, and the capital was established in Kathmandu. Eagle (2000:15) summarized the political policies of the Gorkhas as below:

> "…they were able to create a united and secure Nepal in the face of the continuing encroachment of the British into the area. The Roman Catholic missionaries, who had entered and established missions in Nepal under the Malla kings, were suspected of covertly supporting the British. They were expelled from Nepal by the Gorkhas and the nation was closed to all foreigners from that time until 1951. ...The language of the Gorkha kings was the Indo-Aryan language, Gorkhali, now called Nepali."

In 1814, the British declared war on Nepal, and Nepal lost the battle. The British, impressed by the extraordinary bravery of the Nepalese soldiers, made an agreement with the Nepalese government to recruit Nepalese soldiers to help maintain and extend British rule in India. Most of the famous Gurkha regiments, from 1815 until the present, were not from the high-caste ruling elite whose first language is Nepali, but from the Mongoloid or mixed-race people who mostly spoke one of the Tibeto-Burman languages as their first language. Nepali became the lingua franca of the whole Nepalese army including the

British-Gurkha regiments (Eagle, 2000:15). The Gurkha regiments were educated by the British in both English and Nepali and fluency in English was a requirement for any Gurkha officer. Children of Gurkha soldiers were often sent abroad for education in English-medium schools. Thus, the Gurkhas and their children became the first non-elite people in Nepal who could speak English (ibid.:17).

Through a series of palace intrigues, a massacre, and a successful coup, Jung Bahadur Rana overthrew the royal family and took over the government as the Prime Minister of Nepal in 1847. During the Rana oligarchy (1847-1951), Nepal was "kept in the worst form of isolation, backwardness and economic exploitation" (ibid.:16) because the Ranas were not interested in nation building at all. To maintain their power, they showed their hostility towards education and repressed their rivals and the common people.

> "Those who did receive education, mainly in exile in northern India and hence in Hindi, formed the bulk of the anti-Rana opposition that led to regime change in 1951" (Sonntag, 2007:208).

Prior to 1950, the literacy rate for the whole nation was estimated at one percent due to the educational policy of the Rana regime, which opposed mass education. Some literacy was ascribed to the religious education of Hindu Brahmins, Buddhists, and Gurkha soldiers (Shrestha, 1977:15). Adult literacy programs with the 3 Rs – reading, writing, and arithmetic –were initiated only in the early 1940s to train Nepalese as potential British Gurkha soldiers for India. Illiteracy statistics from 1954 are given as follows in Table 1 (UNESCO, 1972:117):

Table 1: Illiterate population and percentage of illiteracy of 1952/1954 Nepal census

Year of census/ survey	Age level	Illiterate population			Percentage of illiteracy		
		Total	Male	Female	Total	Male	Female
1952/1954	15+	4,808,919	2,190,869	2,618,050	94.9	90.9	99.4

NFE/Literacy initiatives in Nepali have been an integral feature of eleven different national development plans since 1956. Plans for formal education have also taken a variety of forms in accordance with the development plans (see Appendix A).

> "With changes in the development philosophy and strategies, NFE became a powerful vehicle for community and human resource development, empowerment and poverty reduction. So, NFE encompasses children, youths, and adults; disadvantaged and discriminated as target groups…" (UNESCO, 2009:1).

The latest NFE initiatives are the NFE Policy and the School Sector Reform Plan (SSRP) 2009-2015 that the Ministry of Education (MoE) promulgated in 2007 and in 2009 in line with the eleventh national development plan 2007-2012. Both the NFE Policy and the SSRP emphasize the right to education in the indigenous minority languages and Nepali as media of instruction, decentralization of educational management responsibilities, human resource empowerment, inclusive education for the disadvantaged, and partnerships with private sectors and INGOs/NGOs (NFEC, 2007; MoE, Government of Nepal, 2009). The SSRP aims at improving the literacy rate among Nepalese population as shown in Table 2:

Table 2: Target literacy rate of the SSRP

Literacy Rate: % (percentage of literate people)								
	Base Years		Targets					
	2007/08	2008/09	2009/10	2010/11	2011/12	…	2014/15	2015/16
Age group 15-24	73	75	78	80	83		92	95*
Age group 6+ years	63	69	76*	78	80		88	90*
Age group 15+ years	52	56	60**	62	64		72	75*

Source: MoE, Government of Nepal, 2009:14.
*From EFA-National Plan of Action, **From Three Year Interim Plan

By and large, the Government of Nepal has adopted diverse approaches for NFE at different development periods as follows (Acharya and Koirala, 2006:2):

- governmental sector development approach in the 1950s and 1960s;
- integrated rural development approach in the 1970s;
- participatory development initiatives in the 1980s;
- liberalization, privatization, and the involvement of civil societies in the 1990s; and
- human rights, social justice, and peace approaches in the 2000s.

Specifically for NFE/literacy initiatives in Nepal, the government has adopted and promoted two approaches: 1) the literacy campaign approach for eradication of illiteracy and 2) a program approach for literacy classes with or without human resource development/ empowerment and poverty alleviation efforts.

The NFE/literacy providers in Nepal can be categorized as follows (UNESCO, 2009; Acharya and Koirala, 2006; Tuladhar, 1997):

1) Governmental organizations (GOs)– e.g. MoE and other line ministries[9]; Curriculum Development Center; Non-Formal Education Center; Department of Women's Development

[9] For example, the Ministry of Health, Ministry of Agriculture, and Ministry of Forest and Soil Conservation.These are the ministries which operate their own education programs based on the NFE policy in accordance with their development agendas.

2) Non-government organizations (NGOs) – e.g. Aama Milan Kendra; Agroforestry, Basic Health and Cooperatives Nepal; BASE; CEFA; NRC-NFE; SAATHI, Shakti Samuh, Women Awareness Center Nepal
3) International non-governmental organizations (INGOs) – e.g. Action Aid-Nepal; CARE-Nepal; Center for Development and Population Activities; Didi-Bahini JICA; PACT; Plan-Nepal; Rural Education And Development; SATA; Save the Children (SC)-US; USAID; USC Canada Asia; UMN; UNICEF; World Education-Nepal
4) Indigenous community-basded organizations – e.g. Bhalmansa (of Tharu community); Eastern Tamang Language Team; Tamang Gedhung Sangh; Guthi(of Newari ethnic group); Kirat Yakthung Chumlung (of Limb community)
5) Community Learning Centers (CLCs)
6) Other organizations:
    - Research organization – e.g. CERID of Tribhuvan University
    - Material production organization – e.g. Janak Education Material Production Center

These NGOs and INGOs have introduced multiple innovative approaches for teaching adults in their literacy programs including the following (Tuladhar, 1997; NRC-NFE, 2001; Robinson-Pant, 2010:139):

- the Alphabetical approach based on Frank Laubach's method;
- the Key word approach based on the Freirean method;
- the Whole Language approach with Big Books;
- Learner generated materials (LGM) development approaches;
- Regenerated Freirean Literacy through Empowering Community Techniques (REFLECT) using Participatory Rural Appraisal (PRA) visual methods; and
- Language experience approach (LEA)

The NFE/literacy programs conducted by various institutions in Nepal (Medel-Anonuevo, 1996:51) can be classified into four different types of models as shown in Table 3:

Table 3: Four models of literacy programs in Nepal

Type	Duration	Textbook/Primer	Focus	Note
Model 1: 12 month literacy + 3 month vocational course	a) 6 month basic course b) 6 month advanced course c) 3 month vocational course	a) *Naya Goreto*[10] ("New Trail") b) Materials designed by SC-US and other organizations	a) & b) basic literacy c) practical functional skills – e.g. farming and business	Community reading center was used by the graduates
Model 2: 18 month literacy course with 3 phases	a) 9 month basic course b) 6 month advanced course c) 3 month additional course	Materials for all the phases developed by BPEP	a) Basic literacy b) & c) Functional skills related with health, family planning, income generation, etc.	
Model 3	6 month course – organized by Adult Education Section (AES) of MoE and several NGOs	*Naya Goreto*	Basic literacy	
Model 4**:** 9-12 month integrated literacy	a) 6 month basic course; b) 6 month advanced or 3 month follow-up course	*Naya Goreto* Materials developed by SC-US, Action Aid, WE, BPEP, and AES of MoE	a) Basic literacy b) Income generating activities	Literacy linked with saving and credit programs

The major content of literacy programs conducted by INGOs/NGOs are the 3Rs blended with life-related information such as health and agriculture, and contemporary social issues such as human rights, gender, caste, ethnicity, language, regionalism, religion, and disability.

Except for the second model which ran a nine month-long program, all other models indicate that most literacy agents have run six month-long basic courses using a Nepali primer, *Naya Goreto*, and/or other literacy materials developed by INGO/NGO/GOs. These basic courses were followed by six month-long advanced

[10] *Naya Goreto* is a literacy primer in Nepali which has been widely used for the national literacy programs in Nepal. It consists of two volumes and is based on the theory of adult learning and key word approach. It has recently been revised to include more social and cultural themes for enhancing more functional aspects of teaching contents. The updated one was available electronically (*Naya Goreto 2065*) on the government website, www. nfec. gov.np or http://nfec.gov.np/index.php?act=publication&page=3.

courses. Functional literacy was either embedded in the content of general literacy materials or taught separately in the three month-long vocational courses. It is known that the majority of the participants in the national seminar[11] were in favor of the fourth model. They pointed out two major issues: 1) a six month-long literacy course is not enough for the illiterate to become literate and 2) the literacy program needs to be linked with the functional literacy activities such as income generating, farming, family planning, and healthcare (Medel-Anonuevo, 1996:52).

1.3.2 Adult Literacy in the Vernacular Languages of Nepal

Due to its ethnic diversity, complexity, and educational traditions, Nepal is confronting various challenges in implementing high quality education for all. There have been a number of studies on the current situation of multilingual education in Nepal. Among them, "Exploring Monolingual School Practices in Multilingual Nepal" (Awasthi, 2004) investigated the current instructional practices in Nepal. Awasthi concluded that existing instructional practices did not allow non-Nepali speaking children to receive education through their mother tongue thus contributing to higher dropout, repetition, and failure rates through the early grades. Awasthi's research also found that current policy and practice on medium of instruction was contributing to linguistic hierarchies and social divisions in society. Non-Nepali speaking students and parents have tended to change their linguistic identity because their mother tongues have been

[11] It was one of the five national seminars organized by the UNESCO Institute for Education in 1996. During the discussion of the seminar, the data of four models were collected and the strategic needs were reviewed. According to my observation, these four models are still found in Nepal.

ignored, undervalued, or construed as a disadvantage.

In 1990, the indigenous peoples in Nepal began to organize a mass movement for the creation of a democracy in order to establish and protect their linguistic, cultural, and human rights. In response, Article 18 of the Constitution of 1990 guaranteed the fundamental right of individuals to receive primary education in their first language. Article 18 states:

> "Each community residing within the Kingdom of Nepal shall have the right to preserve and promote its language, script and culture; and each community shall have the right to operate schools up to the primary level in its own mother tongue for imparting education to its children."

Since then, mother tongue literacy programs in Nepal have gradually begun to receive increasing support from the government with respect to the cultural and educational rights of the minority languages in Nepal. The subsequent education plans adopted by the National Education Commission in 1992 and the Higher Education Commission in 2000 also advocated mother tongue education (Khadka et al., 2006).

Another significant recent impetus for mother tongue literacy has been the ongoing demand of the Communist Party of Nepal (Maoists) for the right to mother tongue education. Although they have been one of the main sources of "violent conflict and political upheaval" in Nepal, they have also contributed to "growing attention to the marginalization of certain ethnic minority groups, signaling the importance of recognizing their languages…as their mother tongue" (Robinson-Pant, 2010:137). All current political parties in Nepal generally support the demand of the Maoists who have been leading the government of Nepal since 2008 when the 240 year old monarchy was dramatically abolished.

The Interim Constitution of Nepal, 2007 also recognizes the fundamental right of each language community to gain basic education in their mother tongue and to conserve and promote language, script, culture, cultural tradition and heritage. Article 17 of Chapter 3 states:

> "Education and Cultural Rights:
> 1) Each community shall have the right to get basic education in their mother tongue as provided for in the law.
> 2) Every citizen shall have the right to free education from the State up to secondary level as provided for in the law.
> 3) Each community residing in Nepal shall have the right to preserve and promote its language, script, culture, cultural civility, and heritage."

The SSRP 2009-2015 mentioned above is the latest impetus for quality education especially for indigenous peoples in Nepal by promoting the use of vernacular languages as media of instruction and/or subjects at the level of primary education. The SSRP notes the importance of neo-literacy and lifelong learning as the basis for continuing education for all adults and youths between 15 and 45 years of age. The Ministry of Education expects key results of neo-literacy programs as follows (MoE, Government of Nepal, 2009:44):

- neo-literates empowered and have access to information and skills with ability to make rational choices contributing to improved livelihoods;
- enhanced system capacity and institutional learning;
- 1,050 Community Learning Centers established and operational;
- 686,665 neo-literates engaged in continuing education; and
- mother tongue literacy courses in local languages (through Curriculum Development Center experience and resourcing) introduced.

A number of efforts have been undertaken by the GoN and INGOs/NGOs in support of this literacy policy:

- During BPEP I and II (1991-2001) and following years, primary education materials developed by the Curriculum Development Center (CDC) in

twelve vernacular languages: Newari, Maithili, Tharu, Abadhi, Limbu, Tamang, Bhojpuri, Magar, Rai Bantawa, Gurung, Sherpa, and Chamling (Khadka et al., 2006:1)

- *"*Three language – MT, Nepali, and English – policy*"* recommended by the National Commission Language Policy Report (Khadka et al., 2006:2)
- NFE/literacy programs conducted in seven vernacular languages – Tamang, Gurung, Magar, Tharu, Abadhi, Maithili, and Limbu (ibid.)
- MT literacy materials developed by various INGOs:

Table 4: MT literacy materials developed by INGOs

INGO	Language	Literacy material
World Education	Tharu	Muthlihi: Basic literacy textbook part I & II 10 booklet series: Supplementary materials on anti-trafficking for neo-literates
	Limbu	Chotlung: Basic literacy textbook part I & II
SC-US	Maithili	Learner generated materials
SC-Norway	Magar	Children's reading book
Plan Nepal	Bhojpuri	Supplementary reading materials
	Abadhi	A dictionary

Source: Shrestha, 2004

According to Khadka et al. (2006), a number of ethnic organizations have also organized MT-based NFE/literacy programs. Tamsipakha CLC, with assistance from UNESCO, conducted literacy classes for the Newari people in Kathmandu. Supported by CIDA and WE, Kirat Yakthung Chumlung developed a program for Limbus in the Morang district. Tamang Ghedung Sangh organized literacy classes for Tamangs in the Makwanpur district with support from Plan International, and Backward Society Education developed a program for the Tharu people in Dang district with assistance from UNESCO and WE (see Appendix B).

According to my own initial research[12] on MT-based adult literacy initiatives in Nepal, programs have been conducted by individual national and/or expatriate literacy practitioners, in cooperation with INGOs/NGOs, in eleven different ethnic languages: Eastern Gurung, Khaling, Limbu, Lowa, Magar, Rajbanshi, Sampang, Tamang (Eastern and Western), Tharu, and Thulung (see Appendix C).

In terms of material production in ethnic mother tongues other than Nepali, many MT *Pipal Pustak* (MTPP) series[13] have been produced since 2005, through the yearly MT Story Writing Workshop, in 20 different languages: Awadi, Bahing, Bantawa, Darai, Dhimal, Dumi, Gurung, Jirel, Khaling, Kham Magar, Limbu, Magar, Maithili, Newari, Sherpa, Tamang (Eastern and Western), Tharu, Thami, and Thulung. The MT Story Writing workshop is held every January by Noriko Matsuura, a Japanese literacy practitioner with the MT Center Nepal. The workshop provides a structured framework for people in Nepal to write narratives in their own mother tongues rather than merely translating stories from Nepali (Digital Himalaya[14], January, 2011).

1.3.3 The MT-based adult literacy project of the Eastern Tamang Language Team

The Eastern Tamang Language Team (ETLT) [Purbi Tamang Bhasha Samuh] is an officially registered local NGO which was founded in 2000. It has been contributing to

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[12] This was done through personal email exchanges with some Nepalese and SIL literacy practitioners: Buddha Ghising, Chhing Chhippa Lhomi, Karna Bahadur Tamang, Andrea Csepe, Ingrid Toba, Jessie Glover, Kyoung-rye Park, Lori Marcuson, Mary Morgan, May Wong, Milan Tamang, and Reg Naylor.

[13] *Pipal Pustak* series is a Nepal-based publications series which was originally developed by NFE Support Office of the United Mission to Nepal (UMN) to support literacy in Nepali. The MT Pipal Pustak series has evolved out of the Nepali Pipal Pustak initiative, with support from SIL-Nepal and UMN.

[14] This information is retrieved [January 11, 2011] from http://www.digitalhimalaya.com//collections/journals/mtpp.

various aspects of language development in the Eastern Tamang language. ETLT has produced various kinds of written materials in their own language (ETLT Quarterly Progress Report January-June, 2010):

- a palm-size booklet of "Jesus has power to save us" (summarized version of the Gospel Mark);
- various portions of the New Testament in seven booklets;
- an Eastern Tamang Gospel songs cassette tape and CD[15];
- *Bhitte Patro 2060-2061 Lhochar* (Calendar 2004-2005 New Year);
- *Bhitte Patro 2067-2068* (Wall Calendar 2011);
- *Eastern Tamang Primer Book 1 and 2*;
- *Bridging Course Primer* in Nepali;
- the advanced Arithmetic workbook in Nepali which includes how to read a calendar, time on a clock, and problem-solving questions;
- Milan Tamang and Ram Bahadur Thing have participated in the yearly MT Story Writing Workshops run by the MT Center Nepal, and produced more than 40 story booklets in their own mother tongue.
- The most recent productions in 2010 are four tracts: Yesu keba dhin (Chrismas), Tiga hragse (What to weave), Daha (Jealousy), Pap metab (Redemption).

Before the adult literacy project was launched as a formal program by ETLT, the first literacy baseline survey of felt needs in Eastern Tamang communities was conducted in 2005 by Milan Tamang, a national literacy practitioner with ETLT. A second baseline survey was conducted more recently between July and September, 2010 by Milan Tamang and Madan Tamang. They visited twenty one Tamang villages to ask the following questions: 1) What are some reasons for having a literacy class in Tamang language? 2) What are the advantages of the class? 3) What would its impact be among Tamang society? Data from the respondents can be summarized as follows:

[15] It contains seven different Tamang songs produced by the ETLT, especially sung by Buddha Ghising. Except for one or two songs, all are gospel songs or worship songs (based on email communication with B. Ghising on May 23, 2010).

- Tamang literacy class would help the Tamang people identify letters.
- The program would help Tamang people preserve the Tamang language and would make it easy for them to understand the subjects taught in the language.
- Once the Tamang people can read and write in their own mother tongue, they will be able to learn the national language more easily.

When Tamang villages recognize the necessity of running a literacy program in their communities, the ETLT helps them form a class management committee and train facilitators whom the committee selects. The committee provides facilities for running a literacy class in their village and raises at least fifty rupees (equivalent to 0.68 US dollars) from each participant of the class to send to the ETLT office in Kathmandu (ETLT Progress Report July-September, 2010).

Since November, 2008, the ETLT has been running three different kinds of MT-based adult literacy courses: basic, advanced, and transitional courses. The basic course is run for seven months, using the ET Primer 1 and 2 which uses the Key Word approach. The advanced course teaches functional skills for five weeks using the advanced *Arithmetic workbook*. The transitional/bridging course is run for three months to teach Nepali literacy to the finishers of the basic course.

By 2010, ETLT had run seventeen literacy classes in the villages of five different districts in Nepal and produced 397 graduates in total (ETLT progress report April-June, 2010). Based on the result of the second baseline survey, ETLT plans to run another twenty literacy classes in 2011 (ETLT progress report July-September, 2010).

1.4 The Problem

This study aims to investigate various aspects of literacy assessment, to develop

suitable standards and descriptions of skill levels of adult literacy, and then to propose guidelines for developing a literacy assessment instrument, which can be generalizable cross-linguistically in the context of Nepal, by devising the first sample draft of a direct literacy measure for the Eastern Tamang adult learners.

Despite the many shifts of policy adopted by the different Education Plans of Nepal and the unstable political situation, some of the MT-based adult literacy programs have made good progress in program management and material productions in the context of the ethnic cultures especially in the 2000s. Both the NFEC Policy in 2007 (see Appendix D) and the SSRP in 2009 promulgated by the MoE under the GoN employ the new strategies of NFE for adults and out-of-school youths to learn literacy and life skills in their first language or mother tongue. Thus, more MT-based adult literacy programs are likely to be planned and implemented by additional indigenous language communities and local government agencies in accordance with the new NFE Policy and the SSRP.

The Eastern Tamang language community has been increasingly motivated to learn how to read and write in their own language due to the positive results of the MT-based literacy classes run by the ETLT. Many other Tamang villages have asked the ETLT to facilitate literacy programs for them. The increasing demand for literacy classes among the Eastern Tamang communities has led the ETLT to prepare not only for expanded programs with more teacher training and material production, but also for the evaluation of program effectiveness.

In July 2010, the ETLT invited an external evaluator, Mr. Ari Vitikainen, who is working as a MLE consultant in Laos, for their first program evaluation. According to

reports (Varenkamp, personal communication, July 2010), the ETLT received a positive report, in general, of their literacy program. The evaluation was, however, about general program organization and management. It did not include specific measurement of their program participants' literacy performance level as an indicator of the impact of the program.

Recently, Milan Tamang, the ETLT literacy program coordinator, devised a simple evaluation sheet to measure the participants' mastery of reading and writing in ET. It contains four major testing elements: 1) writing the names of five objects pictured; 2) two reading comprehension questions from a short passage with thirty words in four sentences; 3) building four words out of sixteen syllables given in a table; and 4) four arithmetic questions – two of addition and two of multiplication. It is a written test similar to the examination for school pupils. However, it is too simple to measure the more general literacy skills of program participants. Therefore, ETLT still needs to construct a specific evaluation system and research methodology to measure more precisely the learning outcomes of their participants.

In recent years there has been a growing need for a more objective and systematic evaluation of educational achievement of adult literacy programs in Nepal. A report of the South Asia EFA Mid-Term Policy Review Conference (June 16-19, 2008, Kathmandu, Nepal) presented recommended policies, strategies, and innovative approaches based on the lessons of successful examples in the context of the respective target groups. One of the strategies of the allocation of the education budget is directly related to objective literacy assessment, stated as follows:

"In order to demonstrate that allocating funds to adult literacy is effective and valuable:

- Advocate and mobilize communities (mass media – TV, Radio, various ICT, print, including digital);
- Mobilize communities through Community Learning Centers (CLCs) and community based learning programs to provide life long learning;
- Providing relevant content for literacy, life skills, and skill training; ….
- Utilizing literacy assessment rather than self-report to provide a more accurate picture of literacy development in the country;
- Provide literacy in workplaces" (UNESCO, 2008).

Unfortunately, as Wagner (1990:112) has noted, evaluation resources are least available in the Third World societies where illiteracy appears greatest. According to Comings et al. (1992:212-213), seven evaluations – five adult literacy programs and two out-of-school child programs – have been conducted under the National Literacy Program in the rural villages of Nepal between 1986 and 1990. The evaluations collected data of drop-out rates, female participation, language of instruction, skill acquisition, skill retention, changes in attitudes and knowledge, effects on the primary schools, and costs. The tests for the level of literacy skill included tasks ranging from simple word or number recognition to more difficult comprehension, writing, and math problem solving in Nepali. However, those tests were not normed to standards, thus were not an exact measure of learning or general skill development even though they gave an indication of learning (Comings et al., 1992:221).

The central problem is this: how do the graduates of the Eastern Tamang MT-based adult literacy program know whether they are literate or not and if they are, what level of literacy have they attained? These questions lead to subsequent questions as follows:

- What are the competencies/ skills they should acquire to be called

"literate"?
- What are the criteria/standards which correspond to different levels of literacy in minority languages?

Therefore, the problem of this study is 1) to investigate types of literacy assessment, key elements, and test components of literacy skills, 2) to develop suitable standards and performance levels of adult literacy, and 3) to propose a cross-linguistic guideline for developing a literacy assessment instrument in the context of Nepal by devising the first sample draft of such an instrument for the Eastern Tamang mother tongue-based adult literacy program in Nepal.

1.5 Significance of Study

If successful, this study will develop a set of guidelines and a functional illustration or model for doing MT literacy assessment in Nepal. The implications are as follows:

- It will provide a measurement tool for individual participants in the ET adult literacy program to establish what they have achieved from their participation in the program in terms of specific literacy skills and levels.
- It will provide a resource for collecting credible data and indicators of participants' learning outcomes for literacy planners and facilitators of the ETLT and/or other organizations to identify skill gaps and needs and to make adjustments where needed.
- It will offer a relatively reliable source of evidence-based information, rather than self-assessment or proxy measures, to policy makers and collaborating local/national/international organizations so that they can make realistic

decisions for efficient allocation of resources to improve education quality.

- It will present an exemplar of an adaptable test set for indigenous languages and establish an empirical evaluation standard/criterion for adult literacy performance in Nepal.
- It can be a first step for the development of a national literacy assessment instrument to link between NFE/literacy programs and the formal education system for adult learners of ethnic language communities so that they can be certified by the Government of Nepal and can qualify for further study in formal school settings.

2 LITERATURE REVIEW

Various literature on literacy assessment will be examined in this chapter with a view to establishing a solid practical and theoretical framework for developing literacy assessment in Nepal.

2.1 Why literacy assessment?

The process of globalization has made literacy a critical issue in the development programs of many developing countries (Kamens and McNeely, 2010). However, the international community has so far relied almost entirely on data from indirect or proxy measurement such as self-assessment questionnaires and the number of years of primary schooling, rather than reliable and objective data from direct measurement, to provide worldwide statistical comparisons (Wagner, 1990).

Kudo and Bazan (2009) conducted research on measuring beginners' reading skills and analyzed reading performance data collected in a sample of 475 third-graders in the region of Junin, Peru. In their report, they emphasized the importance of measuring reading skills "as a way to produce reliable information that can be used to guide policymaking, strengthen accountability, and ultimately improve quality of education" (Kudo and Bazan, 2009:1). Stern and Tuijnman (1997:10-11) discussed the potential benefits of surveys involving literacy assessment and noted that information drawn from the assessment of literacy skills would begin to create a more solid basis for policy on education and training.

UNESCO (2004:28) has identified the following priorities for the monitoring and assessment of literacy:

- refining literacy indicators and emphasizing those measuring the qualitative impact of literacy;
- promoting widespread and better use of census and population data;
- developing improved methods for assessing the literacy levels of individuals as well as for evaluating learning outcomes at the program level;
- working out and utilizing a common yet locally acceptable framework for assessing progress towards achieving 50% improvement of levels of literacy by 2015;
- building management information systems in support of literacy policies and programs; and
- studying the specific impact of literacy on the quality of life.

Furthermore, in the UN Literacy Decade (UNLD)[16] International Strategic Framework for Action, UNESCO and UNLD (2009) articulated an additional strategy for the first objective – "to mobilize stronger commitment to literacy" – as following:

> "**Improving assessment, monitoring and evaluation** of literacy to provide policymakers, planners and program managers with timely, valid and reliable data on literacy levels, the needs of populations and the necessary information on the performance of the system in order to take informed policy decisions, to monitor and evaluate the implementation of national plans as regards literacy and other related development activities undertaken in the non-formal education (NFE) subsector and to provide information on the outputs and benefits of programs for mobilizing political commitment and funding" (UNESCO and UNLD, 2009:20-21).

2.2 Methods of Assessment: Direct and Indirect measures

At the General Conference in 1978, UNESCO (1978) recommended several

[16] The United Nations Literacy Decade (UNLD) 2003-2012 was originally proclaimed by the United Nations General Assembly in December 2001, reaffirming the central role of literacy in development. It was officially launched in February 2003, with the vision of Literacy as Freedom and Literacy for All. The UNLD aims: to mobilize stronger commitment to literacy; to reinforce effective literacy programme delivery; and to harness new resources for literacy (UNESCO-UNLD, September 2009).

methods of literacy assessment at the national level as follows:

> "To determine the number of literates (or functional literates) and illiterates (or functional illiterates) any of the following methods could be used:
>
> 1) Ask a question or questions pertinent to the definitions given above, in a complete census or sample survey of the population.
> 2) Use a standardized test of literacy (or functional literacy) in a special survey. This method could be used to verify data obtained by other means or to correct bias in other surveys.
> 3) When none of the above is possible, prepare estimates based on:
> (i) special censuses or sample surveys on the extent of school enrolment;
> (ii) regular school statistics in relation to demographic data;
> (iii) data on educational attainment of the population."

Wagner (1990:120-121) characterized these methods as "self-assessment" and "direct assessment/objective and subjective measures" and provide further discussion of the nature of each method. According to Wagner, virtually all literacy data collection in Third World countries has been conducted, through censuses, by asking the respondent a question or questions of whether he or she can read and write. The simple dichotomy resulting from such a self-assessment is:

- Illiterate. A person is defined as "illiterate" who says her or she cannot read and write with understanding a short simple statement in a significant language.
- Literate. A person is defined as "literate" who says he or she can both read and write with understanding a short simple statement in a significant language.

Wagner points out that the correlation between self-assessment and measured literacy might be expected to vary substantially, depending on factors such as the languages of literacy, the congruence between definitions of literacy, the method used to measure literacy, the rapport between the survey interviewer, the respondent and the

respondent's own understanding of literacy, and survey fieldworkers' level of social science training. Thus, the validity of self-assessments is likely to be questionable in the light of such variation.

Wagner suggests that direct measurement is more likely to provide valid and reliable data of individual "performance or behavioral criteria for determining literacy or numeracy abilities" (Wagner, 1990:121). He suggests such direct measurement of literacy may be both "objective" and "subjective": 1) objective measures which primarily rely on test items with strict controls on the context and structure of the test; 2) subjective measures which are generally based to the interviewer's personal judgment on the performance of the respondent based on some criteria that may be more or less satisfactorily related to other interviewers' judgments (ibid.). Wagner proposes that objective measures having reasonable levels of validity and reliability should be used as much as possible in literacy assessment because the survey interviewers and supervisors in Third World countries are typically untrained in educational assessment (ibid.:122).

Jones (1997:115-138) also classified survey approaches to measuring the distribution of adult basic literacy skills into "indirect measures" and "direct measures." He provides several examples of indirect measures as follows in Table 5:

Table 5: Examples of indirect measures

Type	Example	Source
Simple general self-assessment/ self-rating questions	90. On a scale of 1 to 5, 1 being poor and 5 being excellent, how would you rate your reading and writing skills in English? 1(poor)----------2----------3----------4----------5(Excellent) ○ ○ ○ ○ ○ 89. All things considered, are you satisfied or dissatisfied with your reading and writing skills in English? ▪ Satisfied – ○Somewhat; ○Very ▪ Dissatisfied – ○Somewhat; ○Very ▪ No opinion – ○	The Survey of Literacy Skills Used in Daily Activities (LSUDA)
	89. All things considered, are you satisfied or dissatisfied with your reading and writing skills in English? ○Yes ○No ○Don't know	International Adult Literacy Survey (IALS)
Task-specific self-assessment/ composite literacy help scales	How well can you read instructions on medicine bottles? 5 questions, with yes/no answer, of whether respondents needed help on particular kinds of reading activities: newspapers, forms, government documents, instructions on medicine labels, and other instructions	LSUDA

Source: Jones, 1997:117-20

In both surveys of LSUDA[17] and IALS[18] mentioned in the table above, data on self-assessments were compared to those of direct measures and significant mismatches were found between the two measures. Jones then makes several critical points about the value of indirect measures of literacy (ibid.:117-121):

- Asking individuals to describe their own literacy may seem to require little measurement design work. …… but simply adding a question or two to some survey without a substantial investment in the researching of the scaling properties of those questions will not provide reliable, valid data.
- Indirect measures…require the same kind of psychometric development that direct measures do.

[17] The survey of Literacy Skills Used in Daily Activity (LSUDA) was conducted by Statistics Canada to measure the functional literacy skills of Canadian adults aged 16 to 64 in each official languages – English and French. It was the first attempt to assess adult literacy across language and culture. The result of LSUDA was reported on three literacy scales: reading (without separating prose from document and with a heavy emphasis on documents), numeracy, and writing (Kirsch and Jungeblut, 1997:193).

[18] See the following section 2.3 for the detail of IALS.

- Whether it will turn out that such indirect self-report scales that are reliable and valid are less costly to develop than direct measures remains to be seen.
- There is no basis now for assuming that self-assessment, or any other indirect measure, is a useful approach to measuring literacy skill.

Murray (1997:163-185) refers to indirect measures as "proxy measures" and reviews a brief history of such proxies of adult literacy skills as: 1) signing one's name in the middle ages; 2) the ability to read and write in the classical languages– Latin and Greek – in the late 19th century; 3) self reports of proficiency; and 4) educational attainment and years of schooling in the 20th century. In the survey of Literacy Skills Used in Daily Activity (LSUDA) in 1989, educational attainment was employed as a proxy indicator to estimate both basic and functional literacy levels of Canadian adults as follows (ibid.:165, 177):

1) The number of adults who completed less than grade 5 indicates the number of illiterates.
2) The number of adults who completed grade 5-8 indicates the number of basic literates.
3) The number of adults who completed grade 9 or higher indicated the number of functionally literate.

The pros and cons of the proxy measures that Murray discusses can be summarized as follows:

- Whereas direct assessments are considerably expensive and technically demanding, proxy measures can serve as "low-cost surrogates for explicit measurement" (ibid.:165) reducing the overall need for narrow technical resources.
- Proxy measures can be indicators of comparable "differences observed across both countries and population subgroups" and provide "implications for the legitimacy of standardized protocols for the measurement of adult literacy" (ibid.).
- Proxy measures tend to be based on anecdotal evidence or subjective self-

> assessment of respondents. Thus, they are "so fraught with measurement error, or so uncorrelated to the actual performance of adults, as to be useless for informing public policy" (ibid.:183).

Jones (1997:123-134) provides three different models of direct measures: an item model, a competency model, and a skill model. An item model was devised for the Functional Reading Study (FRS), the main part of the extensive study of adult reading in the United States carried out by the Educational Testing Service in the early 1970s. The FRS attempted to measure the literacy of adults in the United States by profiling the difficulty of representative reading tasks. The items were "constructed to match the categories that had been used in the study of reading practices and were meant to broadly cover the range of adult reading skills. Furthermore, the tasks were to be as similar to real-world tasks as possible" (ibid.:123). The items such as a railroad timetable and five information tags from clothing were organized into test booklets, but not all the booklets were ensured to have items with equivalent difficulty. Thus, the item model used by the FRS did not provide the psychometric tools for researchers to use individual item difficulties to profile individual literacy scores (ibid.:123-124).

A competency model is an approach to measure functional literacy skills of individuals only in a particular social context, based on UNESCO's definition of functional literacy (Revised Recommendation concerning the International Standardization of Educational Statistics, 1978):

> "A person is functionally literate who can engage in all those activities in which literacy is required for effective functioning of his group and community and also for enabling him to continue to use reading, writing and calculation for his own and the community's development."

Jones (1997:126-130) discusses several examples of competency models used in different studies as follows:

- Filling out five forms adapted from real application forms for a Social Security number, Public Assistance, Medicaid, a driver's license, and a personal bank loan – This design was used in the Survival Literacy study conducted in 1970 and the follow-up survey in 1971 by the Louis Harris polling organization as part of the Right to Read campaign for the National Reading Council in the United States. The Survival Literacy study used only very few literacy tasks and did not explore the relation between them and other literacy tasks or the process required to carry out the tasks.
- Twenty-four items identified as the items any literate adult should be able to read, by a panel of famous Canadians chosen by the Southam newspaper chain in 1987 – The Southam Literacy Survey devised this competency model along with adapting the items from the Young Adult Literacy Study which is an ability model. The twenty-four items might be relatively easy items compared to other tasks in daily life of the respondents so they lack representativeness.
- Tasks created for the measurement of each knowledge area and designed to distinguish successful adults from others – This is the model developed by the Adult Performance Level (APL) Project. The knowledge areas and types of skills identified by the APL are as follows:

1) five knowledge areas – consumer economics, occupational knowledge, health, community resources, and government and law; and
2) five types of skill – reading, writing, speaking and listening, computation and problem solving.

The APL test classified individuals into three competency levels according to their percentage correct scores. However, APL's definition of competency and the performance level required to demonstrate competency were normed locally and "closely bound to the technical state of a particular society" (ibid.:128). Thus, it does not provide sufficient validity in individual scores for correlation studies between variables and for comparative studies in different societies.

The third model of direct measures that Jones (ibid.:130-134) discusses is the skill model which is also referred to as the ability model. There are two representative ability models: the "classic" grade-level model and the model of Kirsch and Jungeblut (1986). The classic grade-level model was based on the grade–level scores determined from "the average performance of an in-school norming sample on multiple-choice questions covering a particular set of school-related reading passages" (Kirsh and Jungeblut, 1997:190). Since this model attempted to establish a criterion of adult literacy based on performance on school-based standardized reading tests, it has serious limitations for assessing the necessary reading skills of adults and for proper interpretation of their performance levels. First, the materials associated with the school-based tests are different from the literacy materials or tasks that adults usually encounter in daily life. Second, an adult performing at a particular grade level is very different from a student at the same grade level. As Kirsch and Jungeblut noted, the grade-level scores only

"represent the average performance of students functioning within a particular school setting and reflect much more than simple reading achievement" (ibid.). Thus, this model has been used in workplace literacy studies in which grade-level reading tests could be used to select individuals for training programs or jobs according to their performance on the reading required in the program or job, but not in large population surveys (Jones, 1997:131).

Another more advanced ability model was developed by Kirsch and his colleagues for the Young Adult Literacy Survey (Kirsch and Jungeblut, 1986), a household survey to assess the literacy skills of young adults, aged 21 to 25, in the United States. The YALS was conducted in 1985 by the National Assessment of Educational Progress (NAEP) under a grant to the Educational Testing Service (ETS) for the U.S. Department of Education's Office of Educational Research and Improvement (Murray et al., 1998:106). More detail on this model follows in section 2.3.

2.3 Models of direct literacy measurement

The direct assessment techniques of literacy proficiency are often divided into norm-referenced and criterion/objective-referenced approaches. Norm-referenced or grade-level achievement tests are designed to show the level at which, on the average, individuals are able to answer a number of questions on a test relative to all other test takers, while criterion- or objective-referenced tests are designed to determine individuals' mastery of a specific learning objective (Lien, 1976:198). Norm-referenced techniques report an individual's score in relation to the scores of other individuals, while

criterion-referenced approaches report an individual's score in relation to some fixed criterion (Boudard and Jones, 2003:194).

There have been various international and national literacy assessment models undertaken to test adult literacy proficiency according to different operational policies.

2.3.1 Young Adult Literacy Survey (YALS)

The direct measurement model of the YALS mentioned above was devised on the basis of seminar work by Irwin Kirsch of ETS and Peter Mosenthal of Syracuse University (Murray et al. (eds.), 1998:101). The Kirsch-Mosenthal framework accounted for the characteristics associated with the difficulty of various types of adult reading tasks in three distinct literacy domains:

- prose literacy, which reflects the ability to read and use texts of varying levels of difficulty which are presented in sentence and paragraph form;
- document literacy, which reflects the ability to use texts of varying difficulty which are presented as tables, charts, and graphs, etc.; and
- quantitative literacy, which reflects the ability to perform arithmetic calculations of varying difficulty which are based on text materials (ibid.:101-102).

To develop the assessment tasks and conduct the assessment, an expert panel convened for the YALS adopted the following operational definition of literacy:

> "Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential" (Kirsch and Jungeblut, 1986:3).

The YALS was conducted by 500 interviewers to assess approximately 3,600 young adults. Approximately sixty to ninety minutes were required for each interview designed to measure proficiencies on diverse tasks that simulate the use of printed

materials encountered in various adult contexts associated with work, home, and community.

These tasks included:

- reading and interpreting prose, as in newspaper articles, magazines, and books;
- identifying and using information located in documents such as forms, tables, charts, and indexes; and
- applying arithmetic operations to information contained in printed material such as a menu, checkbook, or advertisement (ibid.).

The proficiency scales of each literacy domain were designed to range from 0 to 500 with a mean of 250. The assessment model described by Kirsch et al. was used in the YALS and has been applied to other large-scale surveys such as the U.S. Department of Labor (DOL) Workplace Literacy Survey, the National Adult Literacy Survey (NALS), the International Adult Literacy Survey (IALS), and the National Assessment of Adult Literacy (NAAL) (National Research Council, 2005).

2.3.2 U.S. Department of Labor (DOL) Workplace Literacy Survey

The U.S. DOL Literacy Survey was the second large-scale literacy survey conducted by ETS in 1989-1990 to assess the literacy skills of the Job Training Partnership Act (JTPA) and Employment Services/Unemployment Insurance (ES/UI) program participants. It adopted the definition of literacy, the three literacy scales (prose, document, and quantitative scales), and the expanded theoretical framework of YALS

(Murray et al. (eds.), 1998:113). However, DOL researchers identified the cut scores[19] and refined the definition of the five literacy levels for their own purposes. These performance-level descriptions of DOL assessment were replicated with minor adjustments in the NALS. The five literacy performance-level descriptions of NALS in comparison with those of YALS are shown in Table 6.

2.3.3 National Adult Literacy Survey (NALS)

The National Adult Literacy Survey (NALS) was conducted by ETS as well in 1992 for the U.S. Department of Education to assess the literacy skills of a nationally representative sample of individuals aged 16 and above. The NALS adopted the same definition of literacy employed by the prior surveys "to link the results of the NALS to those from the young adult and DOL assessments" (ibid.:129). The pool of NALS tasks consisted of 41 prose tasks (including 26 newly developed), 81 document tasks (33 new), and 42 quantitative tasks (27 new) (ibid.).

Table 6: Performance–level descriptions of YALS and NALS

YALS		NALS			
Level	Description	Level	Prose	Document	Quantitative
Rudi-mentary (150)	Performance at this level suggests the ability to carry out simple, discrete reading	Level 1 (0-225)	Most of the tasks in this level require the reader to read relatively short text to locate a single piece of information which is identical to or synonymous with the information given in the	Tasks in this level tend to require the reader either to locate a piece of information based on a literal match or to enter information from personal knowledge onto a	Tasks in this level require readers to perform single, relatively simple arithmetic operations, such as addition. The numbers to

[19] The cut score refers to "the score that separates one performance level from another performance level" (National Research Council, 2005:17).

YALS		NALS			
	tasks.		question or directive. If plausible but incorrect information is present in the text, it tends not to be located near the correct information.	document. Little, if any, distracting information is present.	be used are provided and the arithmetic operation to be performed is specified.
Basic (200)	Performance at this level suggests the ability to understand specific or sequentially related information.	Level 2 (226-275)	Some tasks in this level require readers to locate a single piece of information in the text; however, several distractors or plausible but incorrect pieces of information may be present, or low-level inferences may be required. Other tasks require the reader to integrate two or more pieces of information or to integrate two or more pieces of information or to compare and contrast easily identifiable information based on a criterion provided in the question or directive.	Tasks in this level are more varied than those in Level 1. Some require the readers to match a single piece of information; however, several distractors may be present, or the match may require low-level inferences. Tasks in this level may also ask the reader to cycle through information in a document or to integrate information from various parts of a document.	Tasks in this level typically require readers to perform a single operation using numbers that are either stated in the task or easily located in the material. The operation to be performed may be stated in the question or easily determined from the format of the material (for example, an order form).
Inter-mediate (250)	Performance at this level suggests the ability to search for specific information, interrelated ideas, and make generaliza-tions.	Level 3 (276-325)	Tasks in this level tend to require readers to make literal or synonymous matches between the text and information given in the task, or to make matches that require low-level inferences. Other tasks ask readers to integrate information from dense or lengthy text that contains no organizational aids such as headings. Readers may also be asked to generate a response based on information that can be easily identified in the text. Distracting information is present, but is not located near the correct information.	Some tasks in this level require the reader to integrate multiple pieces of information from one or more documents. Others ask readers to cycle through rather complex tables or graphs which contain information that is irrelative or inappropriate to the task.	In tasks in this level, two or more numbers are typically needed to solve the problem, and these must be found in the material. The operation(s) needed can be determined from the arithmetic relation terms used in the question or directive.

YALS		NALS			
Adept (300)	Performance at this level suggests the ability to find, understand, summarize, and explain relatively complicated information.	Level 4 (326-375)	These tasks require readers to perform multiple-feature matches and to integrate or synthesize information from complex or lengthy passages. More complex inferences are needed to perform successfully. Conditional information is frequently present in tasks at this level and must be taken into consideration by the reader.	Tasks in this level, like those at the previous levels, ask readers to perform multiple-feature matches, cycle through documents, and integrate information; however, they require a greater degree of inferencing. Many of these tasks require readers to provide numerous responses but do not designate how many responses are needed. Conditional information is also present in the document tasks at this level and must be taken into account by the reader.	These tasks tend to require readers to perform two or more sequential operations or a single operation in which the quantities are found in different types of displays, or the operations must be inferred from semantic information given or drawn from prior knowledge.
Advanced (350)	Performance at this level suggests the ability to synthesize and learn from specialized reading materials.	Level 5 (376-500)	Some tasks in this level require the reader to search for information in dense text which contains a number of plausible distractors. Others ask readers to make high-level inferences or use specialized background knowledge. Some tasks ask readers to contrast complex information.	Tasks in this level require the reader to search through complex displays that contain multiple distractors, to make high-level text-based inferences, and to use specialized knowledge.	These tasks require readers to perform multiple operations sequentially. They must disembed the features of the problem from text or rely on background knowledge to determine the quantities or operations needed.

Source: Kirsch & Jungeblut, 1986:38-39; Murray et al. (eds.), 1998:133

2.3.4 International Adult Literacy Survey (IALS)

The International Adult Literacy Survey (Murray et al., 1998; Boudard and Jones, 2003; Organization for Economic Cooperation and Development (OECD), 2009) was the first large scale cross-country assessment of adult literacy and basic skills. It was conducted by Statistics Canada and ETS over 75,000 adults aged 16 to 65 in 22 countries in 1994-1998. The IALS adopted the methodology, and scales of NALS which was based on proficiency levels of YALS and LSUDA. The IALS was followed by the Adult Literacy and Life Skills Survey (ALL) undertaken between 2002 and 2006 by Statistics Canada and the Program for the International Assessment of Adult Competencies (PIAAC) currently being developed by OECD to measure a broader range of adult skills. These three surveys are summarized in Table 7:

Table 7: Summary of IALS and its successors

Attribute	IALS			ALL		PIAAC
Operational definition of literacy	"Using printed and written information to function in society, to achieve one's goals and to develop one's knowledge and potential." (the same as of YALS)					Similar, but with greater emphasis on a wider variety of text types
Date of data collection	1994 (wave 1)	1996 (wave 2)	1998 (wave 3)	2002 (wave 1)	2006 (wave 2)	2011 (planned)
Participant	Canada, Germany, France, Ireland, The Netherlands, Poland, Sweden Switzerland, (French and German speaking), USA	Australia, The Flemish Community in Belgium, Great Britain, New Zealand, Northern Ireland	Chile, Czech Republic, Denmark, Finland, Hungary, Italy, Norway, Slovenia, Switzerland (Italian speaking)	Canada, Bermuda, Italy, Mexico (Nuevo Leon), Norway, Switzerland, USA	Australia, Netherland, New Zealand, Korea, Hungary	Australia, Austria, Belgium, Canada, Chile, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Japan, Korea, Malta, the

Attribute	IALS	ALL	PIAAC
			Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, USA, United Kingdom
Skills assessed[20]	Prose literacy Document literacy Quantitative literacy	Prose literacy Document literacy Numeracy Problem solving	Literacy (combined prose & document) Reading components Numeracy Problem solving in technology rich environment
Proficiency level	Five levels as in NALS	Five levels for the prose and document literacy scales as in IALS with slight modifications in the level descriptions; five levels for numeracy; four levels for problem solving	Not identified yet, but anticipated to be similar to those of IALS and ALL

Source: OECD 2009

[20] OECD definitions of each literacy skills are as follows (OECD, 2009:10):

- Prose literacy: the knowledge and skills needed to understand and use continuous texts – information organised in sentence and paragraph formats;
- Document literacy: the knowledge and skills needed to process documents, or information organized in matrix structures (i.e. in rows and columns). The type of documents covered by this domain included tables, signs, indexes, lists, coupons, schedules, charts, graphs, maps, and forms;
- Quantitative literacy: the skills needed to undertake arithmetic operations such as addition, subtraction, multiplication, or division either singly or in combination using numbers or quantities embedded in printed material;
- Numeracy: the knowledge and skills required to effectively manage and respond to the mathematical demands of diverse situations;
- Problem solving: goal-directed thinking and action in situations for which no routine solution procedure is available;
- Reading components: the foundational skills needed to gain basic meaning from texts – print vocabulary, sentence processing, and passage fluency;
- Problem solving in technology rich environment: the use of 'digital technology, communication tools and networks to acquire and evaluate information, communicate with others and perform practical tasks'; especially using the worldwide web, spreadsheets and email.

2.3.5 National Assessment of Adult Literacy (NAAL)

The National Assessment of Adult literacy (NAAL) (National Research Council, 2005) is a successor to NALS, conducted in 2003 by the U.S. Department of Education. NAAL was designed to measure functional English literacy skills, including health literacy, of about 19,000 U.S. adults aged 16 and older in households and prisons (Baer et al., 2009:iii). It retained substantial consistency with the 1992 NALS and evaluated trends over the ensuing decade. Four assessment components of the NAAL project consist of the core literacy tasks, the main literacy assessment, the Adult Literacy Supplemental Assessment (ALSA)[21], and the Fluency Addition to NAAL (FAN)[22]. Seven simple literacy questions, called the core literacy tasks, were first given to all respondents. The respondents unable to answer the core literacy tasks successfully were assigned to the ALSA and all other respondents to the main literacy assessment. On scales of 0 to 500, the main literacy assessment measured the three types of literacy – prose, document, and quantitative literacy (ibid.:iv). Results from the 2003 NAAL were reported as average and as the percentage of America's adults using five performance levels for each of the three types of English literacy. A brief description of each level is

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[21] The Adult Literacy Supplemental Assessment (ALSA) was designed to gather information about certain skills of America's adults with lowest literacy. The respondents in the ALSA were asked to complete a series of basic skills – letter and word-reading, word identification, and basic comprehension skills – using products with English text commonly found at home, at work, and in the community (Baer et al., 2009:3).

[22] The FAN was administered to all adults who participated in the NAAL project following the completion of the main literacy assessment or the supplemental assessment. The FAN was an oral reading fluency assessment developed to measure the basic reading skills of America's adults. All the respondents taken the FAN were asked to read aloud a series of short text passages and digit, letter, and word lists. Their oral reading of each task on the assessment were recorded and scored later for speed and accuracy (ibid.:4).

presented in section 2.6.

As shown in Table 7, all the national and international direct assessment were designed and conducted for the populations of developed countries. Wagner (2008:659) remarks that such sophisticated measurement raises several issues: "the low degree of transparency of the data when collected using the IRT[23] methodology, the expensive process of creating methods of cross-cultural comparability, the long time taken to complete a given study, and the overall cost of highly sophisticated methods in poor countries."

2.3.6 Literacy Assessment and Monitoring Program (LAMP)

In an effort to develop a valid methodology for measuring literacy and numeracy skills of youths and adults in developing countries, the UNESCO Institute of Statistics (UIS) initiated the development of Literacy Assessment and Monitoring Program (LAMP) in 2003 (Wagner, 2008:659; UNESCO-UIS, 2009:10). LAMP has been developed on the basis of IALS (Kirsch, 2001) and ALL (Murray et al., 2005) in cooperation with ETS and Statistics Canada through pilot projects in six countries:

[23] The Item Response Theory (IRT) is a psychometric theory "describing the application of mathematical models to data from questionnaires and tests as a basis for measuring abilities, attitudes, or other variables. IRT models apply mathematical functions that specify the probability of a discrete outcome, such as a correct response to an item, in terms of person and item parameters. Person parameters may, for example, represent the ability of a student or the strength of a person's attitude. Item parameters include difficulty (location), discrimination (slope or correlation), and pseudoguessing (lower asymptote). … Among other things IRT theory provides a basis for evaluating how well assessments work, and how well individual questions on assessments work. In education, Psychometricians apply IRT in order to achieve tasks such as developing and refining exams, maintaining banks of items for exams, and equating for the difficulties of successive versions of exams (for example, to allow comparisons between results over time). IRT is often referred to as latent trait theory, strong true score theory, or modern mental test theory and is distinguished from Classical test theory" (Kiff, Joe (ed.), http://psychology.wikia.com/wiki/Item_response_theory).

El Salvador, Kenya, Mongolia, Morocco, Niger, and the Palestinian Autonomous Territories (UNESCO-UIS, 2009:4). LAMP is a direct assessment instrument measuring the three domains of literacy: "reading of continuous texts (prose); reading of noncontinuous texts (document); and numeracy skill." In addition to these three domains, LAMP measures lower-level reading skills through a module testing reading components: "the ability to name letters and numbers, to process sentences rather than just decoding words and to read paragraphs fluently" (ibid.:7). LAMP also uses a background questionnaire to collect "data on each respondent's socio-economic background and use of written materials in various daily-life contexts" (ibid.:8). The five levels of literacy skills adopted by LAMP can be summarized as follows (ibid.:18):

- Level 1 indicates persons with very poor skills, where the individual may, for example, be unable to determine the correct amount of medicine to give a child from information printed on a package.
- Level 2 refers to respondents who can deal only with material that is simple, clearly laid out, and in which the tasks involved are not too complex. It denotes a low level of skills, although less obvious than in Level 1. It identifies people who can read but test poorly. These individuals may have developed coping skills to manage everyday literacy demands, but their low level of proficiency makes it difficult to face novel demands, such as learning new job skills.
- Level 3 roughly denotes the skill level formally required for successful secondary school completion and entry to tertiary-level educational institutions. Similar to higher levels, it requires the ability to integrate several sources of information and solve more complex problems. OECD countries considered this level a suitable minimum for coping with the demands of everyday life and working in a complex, "advanced" society.
- Level 4 and 5 describe respondents who demonstrate a command of higher order information processing skills.

Although LAMP shares with IALS and ALL a common approach to measure literacy skills in three operationally defined domains, there are several elements

differentiating LAMP from IALS and ALL. First, IALS and ALL were developed to address increasing concerns about competitiveness and the importance of skill development in the current economy. However, LAMP emphasizes education as a human right based on the broader set of foundations provided by the principles, values and mandates of the UN system even though it does not ignore the importance of skill development in economy (ibid.:21). Second, LAMP focuses on developing countries with a wider array of language families and scripts while IALS and ALL were conducted mainly in industrialized countries and European languages written in the Roman alphabet (ibid.:22). Third, LAMP is primarily an attempt to enable countries to produce more robust data on literacy at the national level in a sustainable and self-reliant manner while the ultimate goal of IALS and ALL is to produce an international report and an international dataset to be used for research purposes (ibid.:23). Fourth, the most differentiating feature of LAMP is that LAMP is the first international attempt to study people's ability related to basic reading components in a diversity of languages. "The reading components module of LAMP introduces a dimension that is strongly intertwined with the specificities of each language and script used in the assessments. Therefore, it requires constant awareness of the peculiarities inherent in each language and a sustained alertness against standardizing beyond reasonable limits" (ibid.:24).

UNESCO Kathmandu, in collaboration with the NFE Center and the Central Bureau of Statistics, has recently started an initiative to assist educational authorities to obtain quality statistical data on literacy in Nepal. A one-day workshop with fifteen

participants from diverse organizations was held in Kathmandu to develop questions for getting more reliable data and to explain how to use the literacy module of the LAMP in future national household surveys. A new household survey using the new methodology was planned to be implemented in Nepal within 2010[24] and the results are not yet available to me.

2.3.7 The Smaller/Quicker/Cheaper (SQC) Approach

In accordance with the launch of the UN Literacy Decade in 2003 and recently increased emphasis on monitoring and evaluation of adult literacy around the world, Wagner (2003; 2008) proposes an alternative national household survey model, the Smaller/Quicker/Cheaper (SQC) model, made for use in developing countries. The SQC approach suggests that three main parameters – size, speed, and cost – should be considered when new assessment tools are considered in developing countries. The attributes of these three parameters can be summarized as follows (Wagner, 2003:305-307):

1) Smaller and more focused

- Focus on national and local interests (avoid international comparability).
- Collect focused/strategic demographic samples – reach the unreached and un-/under-schooled (gender, minorities).
- Just enough psychometric items to give operational and/or policy guidance.

2) Quicker

- Speed of delivery is important for policy makers – Literacy assessments

[24] This information comes from the web site of UNESCO, http://portal.unesco.org/geography/fr/ev.php-URL_ID=12285&URL_DO=DO_TOPIC&URL_SECTION=201.html.

need to be completed in "real time" so that results can affect policy and spending in the "lifetime" of current ministerial appointments and/or programmatic needs.
- Shorter time horizons – months or weeks rather than years.
- Rapid prototyping of simpler tests – by speeding up data collection and analysis and reporting.
- Frequency is important.

3) Cheaper

- Needs to be affordable – on a budget of only a fraction of what large-scale comparative studies spend.
- "Shareability" of assessment tools across programs and contexts can produce economies of scale.
- Transparency and simplicity.[25]
- Capacity building is easier.
- Sustainability: lower cost means that replication is more affordable.

The foundation of this SQC model can be found in the Basic Learning Competencies (BLC) assessment design which has been developed on the basis of the 1998 and 1999 expert seminars[26] organized by UNESCO-Paris and International Literacy Institute (ILI) in the light of the 1990 Jomtien goals[27] of the World Conference on EFA. According to Wagner et al. (1999:5), the BLCs assessment instrument is "a low-cost and

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[25] Transparency and simplicity of the SQC means that fewer relatively expensive, external or international experts are required to interpret or reanalyze the data for a non-expert audience and the process of data collection and analysis are more "transparent" to local human resources (Wagner, 2008:664-665).

[26] In June 1998, a first expert seminar entitled "Literacy Assessment in Out-of-School Youth and Adults" was held at UNESCO-Paris. The focus of the seminar was on "describing and analyzing the need for better assessment and monitoring of basic learning competencies (BLCs), from the basic skills (reading, writing, math) to 'basic life skills', as well as describing methodologies for assessments at the national survey level and at the program level." The following seminar was held on April 12-14, 1999, in Philadelphia in collaboration with ILI and UNESCO-Paris. The focus was on "the creation of a model for BLC assessment, especially for out-of-school youth and young adults" (Wagner et al., 1999:5).

[27] The World Conference on EFA held in 1990 at Jomtien, Thailand, set a number of educational goals related to out-of-school youth and adults, including: 1) to reduce the number of adult illiterates to half of the 1990 level by the year 2000; 2) to improve learning achievement to an agreed percentage of an appropriate age cohort; 3) to meet the need to monitor and evaluate the performance of individual learners, the delivery mechanisms, and outcomes of literacy and other NFE education programs (Wagner et al., 1999:5).

adaptable methodology for the assessment of basic learning competencies in diverse cultural contexts." It was designed to combine elements of household surveys (e.g., using moderately sized samples) with the use of relatively simple measurement tools –both direct and indirect – attuned to local and national needs (ibid:8). The target population of the assessment was out-of-school youth and young adult in the age range of 12-20 years, "those who have had limited or no opportunities to access or benefit from sustained learning in formal school settings, due to their gender, social, economic, geographical, ethnic, or political circumstances" (Wagner et al., 1999:7).

The BLC assessment model employs four types of skills (reading, writing, numeracy, and life skills[28]), three skill domains (prose text, documents, and decontextualized print[29]), and four skill levels (non/inadequate/no ability, prerequisite, basic, and advanced levels). More details are described in Table 8:

Table 8: Type of skills and skill levels of the BLC assessment model

Type of skills		Example of skills	Skill level
Literacy	Reading	•Ability to name letters or smallest script unit •Ability to understand the relationship between text and images •Sight word recognition of common words in contextual print (road signs, package labels)	1) None or non-reader level: refers to those individuals who, for all practical purposes, do not possess even the rudiments of reading skills, and cannot, for example, recognize more than a few letters of the alphabet at most. 2) Prerequisite level: includes letter recognition, decoding, and "sounding out" of short texts. 3) Basic level: refers to skills in "reading to learn" and "reading to do." Individuals at this level would

[28] According to Wagner et al. (1999:17), life skills relates to the diverse knowledge, skills, values, and attitudes that together enable children, youth, and adults "to prevent or cope with situations in which their own (physical or psychological) well-being or safety may be at risk, achieve their personal goals, function effectively in their social environment, and enhance their quality of life."

[29] Decontexualized print refers to letters, sub-lexical units such as syllables, words, phrases, and sentences, without any given context. In contrast, prose text can be referred to as contexualized print (Wagner et al., 1999:24).

Type of skills		Example of skills	Skill level
		•Decoding skills – the knowledge and skills to apply decoding in recognizing and pronouncing written words •Comprehension of simple phrases and sentences •Ability to locate, comprehend, and use information embedded in prose text or in documents	be able to: • Answer literal comprehension question about brief, continuous texts (sentences and paragraph in length), • Locate or apply information in simple but authentic prose pieces or documents, and • Form judgments relating text information to background knowledge. 4) Advanced level: refers to a level of skill equivalent to that normally achieved upon successfully completing a secondary school curriculum. Advanced skills are build on those used in basic level tasks, but are applied to more complex tasks and print domains.
	Writing	•Ability to form letters and words using common writing implements (e.g., pencil and paper) •Awareness of print conventions (directionality of script; top and bottom of documents; naming of punctuation) •Ability to copy a written text •Ability to write a text from dictation •Ability to compose a message, or to fill out a form	1) None or non-writer level: refers to those individuals who, for all practical purposes, do not possess even the rudiments of writing skills, and cannot, for example, write more than a few letters of the alphabet at most. 2) Prerequisite level: refers to specific motor skills (the use of writing implements of "technologies" relevant to producing written language) and knowledge of print conventions. Individuals at this level would be able to write individual letters (or characters) of the alphabet or script and common words that appear in their written form in functional contexts. 3) Basic level: refers to skills in "composing" – especially focusing on writing as a means for communicating with others – and "applying" print (such as filling out forms, writing directions, making lists, etc.) by hand or machine such that a skilled reader could understand it. Individuals at this level would be able to : Write a brief message to a literate peer, Write a brief description or story of an event or image, Fill out a simple form, Make a list of items from a familiar category, and Make a judgment of the functional quality (that is, interpretability of a composed text. 4) Advanced level: refers to skills constituting the same as those used in basic level writing tasks, but are applied to more complex writing tasks.
Numeracy		•Ability to count, sort, and perform simple comparisons of quantities of concrete objects (e.g., bottles, cattle, coins) •Decoding the meaning of	1) None or non-numerate level: refers to those individuals who have relatively few mental calculation skills beyond counting of simple quantities and who also cannot recognize the meaning of written digits. 2) Prerequisite level: would include individuals who

Type of skills	Example of skills	Skill level
	numerals (e.g., how many units of something are signified by the digit "5") and of number-words in an indigenous number system •Possession of number-sense (awareness of meaning of numbers, and of magnitude of small and large numbers) •Ability to carry out the four arithmetical computations, either mentally and/or in writing (using written symbols, notations, and procedures) •Knowledge of measurement systems and procedures (telling time, using a scale, using a ruler or measuring tape, using money, converting between unit systems, reading dials) •Understanding of percents, averages, graphs, and other means for summarizing and displaying data that are often used in conveying information about groups or about trends	can engage in some (possibly even advanced) mental calculations using indigenous number systems or measurement devices/techniques only. However, they know few print-based or formal numeracy symbols and systems, though they may be able to do very simple written math problems. 3) Basic level: would include mental and written numeracy skill, including mathematical operations typically learned in school, as well as everyday math (such as estimates and graphs) as might be employed in newspapers. The basic level would thus be calibrated in terms of entry into employment training, economic, social, and health-related needs. 4) Advanced level: Individuals at this level would be able to accomplish, with little difficulty or few errors, numeracy tasks (such as performing various arithmetic functions in formal school-type and everyday settings, locating and using quantitative information in different displays), solve multi-step calculations, and use measuring devices.
Life skills	•Knowledge of nutrition and eating habits (e.g., Is it safe to eat fish which is kept in a refrigerator for 3 days?) •Knowledge of prevention of disease (e.g., What are effective ways to prevent getting HIV-AIDS?) •Knowledge of substance abuse (e.g., In what ways is tobacco smoking dangerous to your health?) •Knowledge of personal finances (e.g., How much savings would be required to accumulate enough to build or buy a house in your village?) •Knowledge about civic rights	1) Inadequate (or high risk) level: refers to those individuals who, for all practical purposes, do not possess effective mastery of knowledge, skills, or attitudes as a basis for adequate life survival. Such individuals (and their dependants) are likely at high risk to become involve in life threatening situations. 2) Prerequisite level: Only in localized or constrained contexts, individuals at this level would be able to show some examples of functional knowledge of high risk issues, behaviors, and concepts. They would also be able to demonstrate some attitudes, behaviors, and actions that reduce the risk of personal or social harm. 3) Basic level: refers to a competency in acting and coping with critical life-risk domains, whether in health, everyday activities, and so on. Individuals at this level would be able to: • Know/understand safety signs and rules, warning symbols and nutritional food groups, • Demonstrate attitudes and values to not engage in

Type of skills	Example of skills	Skill level
		risky health and safety behaviors, • Demonstrate avoidance of risky behaviors, such as recognizing poor nutritional items in an infant's life, and • Acquire information on or communicate a critical awareness of how and why such behavior can harm themselves, individuals, and society (e.g., attending a parenting class; asking advice; awareness high cholesterol foods and relation to health). 4) Advanced level: refers the same skills as those used in basic levels, but applied and integrated into more complex tasks.

Source: Wagner et al., 1999 and Wagner, 2004

Most of the direct assessment instruments have been developed by western scholars, thus they are often too sophisticated and too expensive to implement in developing countries. In comparison with other assessment models mentioned above, the SQC model with the direct assessment instrument of the BLC approach is deemed to provide the most applicable rationale and criteria for developing policy measures and devising a literacy assessment tool for the Eastern Tamang people as well as other indigenous language groups in Nepal. Many adult learners in literacy programs in Nepal had never experienced such standardized tests and thus would not be able to deal with such sophisticated test items. Meanwhile, the SQC model using the BLC measurement proposes much fewer and simpler test components and contents in consideration of the test takers of a developing country like Nepal. The model focuses on local and national needs of literacy assessment rather than international comparability, and capacity-building in local people rather than relying on external experts, emphasizing quicker and simpler data process. Evenif the SQC model is designed for literacy assessment through a

household survey it still provides a replicable method for developing literacy assessment in a classroom setting for adult learners from the Eatern Tamang and other indigenous people groups in various literacy programs in Nepal.

2.4 Definitions of literacy

There are diverse definitions of literacy: traditional literacy, civic literacy, critical literacy, cultural literacy, functional literacy, inter-generational/family literacy, political literacy, task-specific literacy, and workplace literacy (Bhola, 1994:31-34). Bhola (ibid.:28) adduces several reasons why literacy definitions are different:

1) the languages of literacy are different (e.g., Chinese versus Hindi);
2) different levels and standards of literacy skills are possible;
3) people prepare themselves to read different kinds of subject matter (e.g., historians versus logicians); and
4) people differ in their objectives for being literate (e.g., work place literacy versus political literacy).

It is impossible to present one universal standardized definition of literacy because different definitions use different mixes of skills and subject matter depending upon their needs (ibid.:34).

Bhola introduces various definitions of literacy defined by different scholars as follows:

1) Gudschinsky's definition (1973:5):

> "That person is literate who, in a language that he speaks, can read and understand anything he would have understood if it had been spoken to him; and who can write, so that it can be read, anything that he can say."

2) Keith Levine's edition to Gudschinsky's definition (Bhola, 1994:30):

> "The capacity to acquire and exchange information via the written word."

3) Bhola's definition in terms of "literacy marks" (ibid.):

> "The ability of a person … to code and decode, that is, read and write, a living and growing system of marks – words, numbers, notations, schemata, and diagrammatic representations – all of which have become part of the visual language of the people … both the specialist and the non-specialist."

4) Paulo Freire's critical/emancipatory/transformational literacy (ibid.:33):

> "Reading the world always precedes reading the word, and reading the word implies continuously reading the world. … In a way, however, we can go further and say that reading the word is not preceded merely by reading the world, but by a certain form of writing it or rewriting it, that is, of transforming it by means of conscious, practical work. For me this dynamic movement is central to the literacy process."

However, according to Bhola, all literacy is functional in the sense that "literacy always comes to find a 'function' in the lives of people who become literate" (ibid.: 2). Functional literacy has been more specifically defined as one of the forms of adult literacy which combines the teaching of reading and writing (traditional literacy) and the teaching of empowering knowledge, attitudes, and skills such as economic skills. Gray (1956:24) defined a functionally literate person as: "A person is functionally literate when he has acquired the knowledge and skills in reading and writing which enable him to engage effectively in all those activities in which literacy is normally assumed in his culture or group." Gudschinsky points out that the concept of functional literacy can only apply in the areas where literacy is indeed essential to adequate functioning in the community, unlikely the preliterate one where there is no need for literacy within the community life at all, based on the following definition:

> "Functional literacy is that degree of literacy which permits the individual to function fully within his community, meeting all the demands of the community on his ability to read" (Gudschinsky, 1973:6).

The definitions of literacy proposed by UNESCO have been evolving over time from a traditional view to more functional and pluralistic perspectives as shown in Table 9:

Table 9: The UNESCO definitions of literacy

Definition of Literacy	Source
A person is considered literate, who can both read and write a short simple statement on his everyday life. A person is considered semi-literate, who can read with understanding, but not write, a short simple statement on his everyday life.	UNESCO, 1957:18
"The ability to read and write in the mother tongue" (cultural definition in the 1960s).	Bhola, 1994:28
a) A person is literate who can with understanding both read and write a short simple statement on his everyday life. b) A person is illiterate who cannot with understanding both read and write a short simple statement on his everyday life. c) A person is functionally literate who can engage in all those activities in which literacy is required for effective functioning of his group and community and also for enabling him to continue to use reading, writing and calculation for his own and the community's development. d) A person is functionally illiterate who cannot engage in all those activities in which literacy is required for effective functioning of his group and community and also for enabling him to continue to use reading, writing and calculation for his own and the community's development.	UNESCO, 1978:
"Literacy is the ability to read and write with understanding a simple statement related to one's daily life. It involves a continuum of reading and writing skills, and often includes also basic arithmetic skills (numeracy)." (employed in the Education for All 2000 Assessment)	UNESCO, 2004:13
"Literacy is the ability to identify, understand, interpret, create, communicate and compute using printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve his or her goals, develop his or her knowledge and potential, and participate fully in community and wider society." (formulated during an international expert meeting in June, 2003 at UNESCO)	UNESCO, 2005:21
"People acquire and apply literacy for different purposes in different situations, all of which are shaped by culture, history, language, religion and socio-economic conditions. The plural notion of literacy latches upon these different purposes and situations. Rather than seeing literacy as only a generic set of technical skills, it looks at the social dimensions of acquiring and applying literacy. It emphasizes that literacy is not uniform, but is instead culturally and linguistically and even temporally diverse. It is shaped by social as well as educational institutions: the family, community, workplace, religious establishments and the state. Constraints on its acquisition and application lie not simply in the individual, but also in relations and patterns of communication structured by society."	UNESCO, 2004:13

"The notion of 'plurality of literacy' was advanced to stress the social dimensions of literacy in relation to both acquisition and application. Therefore, literacy is seen as comprising diverse practices embedded in socioeconomic, political, cultural and linguistic contexts, acquired in school and outside of school. It also involves family and community contexts; the media in various forms of technology; skills for further learning; and the world of work and life in general. Thus, this concept of literacy emphasizes the literacy challenge as making societies literate and not simply as making individuals literate."	UNESCO –UIS, 2009:13

Street (1984:1) points out that the traditional or conventional definition of literacy is the ability to read and write as "a neutral technology that can be detached from specific social contexts." He challenged the conventional view, a view he characterizes as the "autonomous" model of literacy with an examination and critique of various theories about the role and place of literacy in social, political, and economic practice. He also posed the "ideological" model of literacy as the countering conception, contending that "what the particular practices and concepts of reading and writing are for a given society depends on the contexts; that they are already embedded in an ideology and cannot be isolated or treated as 'neutral' or merely 'technical'." In his 2001 publication, Street asserted that ethnographic research was "more concerned with attempting to understand what actually happens than with trying to prove the success of a particular intervention or 'sell' a particular methodology for teaching or management." He emphasized that only an ethnographic approach to the study of literacy uses and practices could focus on the local meanings of literacy/literacies (Malone's book review of Street, 2001). This ethnographic view of literacy indicates that the whole process of developing a literacy assessment should be based on local human resources and practical contexts as well as the local experiences of external experts.

According to UNESCO (2004:12), the operational definition of literacy one

embraces influences the goals and strategies to be adopted and the programs to be designed by policy makers as well as the teaching and learning methodologies, curricula, and materials to be employed by practitioners. UNESCO also noted that one's definition of literacy determines how progress in overcoming illiteracy is monitored and assessed. A definition of literacy guides the whole process of the development of literacy assessment, and provides the ideas of what to assess and how to interpret the result of the assessment. Wagner (1990:118) noted that any literacy assessment procedure required an operational definition of literacy to use as a yardstick. As mentioned earlier in section 2.3, the YALS, the U.S. DOL Literacy Survey, the IALS and its successors, and the NALS and NAAL adopted the same, if not similar, definition of literacy as follows:

> "Using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential" (Kirsch and Jungeblut, 1986:3).
>
> "The ability to understand and employ printed information in daily activities, at home, at work, and in the community – to achieve one's goals, and to develop one's knowledge and potential" (Wagner, 2004:26).

Along with this definition, the SQC model adopted the 1978 UNESCO definition:

> "A person is literate who can with understanding both read and write a short simple statement on his everyday life… A person is functionally literate who can engage in all those activities in which literacy is required for effective functioning of his group and community …" (UNESCO, 1978).

The LAMP adopted the following UNESCO operational definition of literacy particularly for measurement purposes:

> "Literacy is the ability to identify, understand, interpret, create, communicate, compute and use printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve their

> goals, to develop their knowledge and potential, and to participate fully in their community and wider society" (UNESCO, 2005:21).

The Government of Nepal, in an effort to draw from Street's ethnographic perspective of literacy and UNESCO's cultural view of literacy, defined what a "literate" person can do on the basis of daily life and his basic function in it in the context of Nepal as follows:

> "A person who is able to read and write short and simple sentences related to daily life in his/her mother tongue or national language with understanding and who is able to communicate with others and perform simple tasks of calculation" (UNESCO and ACCU, 2003).

2.5 What are literacy skills?

The National Early Literacy Panel (NELP)[30] classifies literacy skills into two concepts: **EARLY LITERACY SKILLS** and **CONVENTIONAL LITERACY SKILLS** (NELP, 2009). The term **CONVENTIONAL LITERACY SKILLS** refers to necessary components of literacy such as decoding, oral reading fluency, reading comprehension, writing, and spelling. The term **EARLY LITERACY SKILLS** refers to precursor literacy skills which provide the launching pad for later literacy achievement. Early literacy skills are also referred to as **PREDICTIVE, FOUNDATIONAL**, or **EMERGENT SKILLS.** The NELP identified

[30] In 2002, the National Early Literacy Panel (NELP) was appointed to examine the implications of instructional practices used with children from birth through age 5 in the USA, under the auspices of the National Center for Family Literacy. The NELP searched for more than 8,000 published scientific articles to screen in regard to its primary goal to identify interventions, parenting activities, and instructional practices that promote the development of children's early literacy skills. Among them, approximately 500 research articles were used in the meta-analysis conducted by the panel to identify both correlations between children's early abilities and skills and later literacy development and the impact of instructional interventions on children's learning (NELP, 2009:1-2).

a total of eleven early literacy skills as follows:

1) Six early skills predictive of later literacy achievement

- Alphabet knowledge (AK) – knowledge of the names and sounds associated with printed letters
- Phonological awareness (PA) – the ability to detect, manipulate, or analyze the auditory aspects of spoken language (including the ability to distinguish or segment words, syllables, or phonemes), independent of meaning
- Rapid automatic naming of letters or digits – the ability to rapidly name a sequence of random letters or digits
- Rapid automatic naming of objects or colors – the ability to rapidly name a sequence of repeating random sets of pictures of objects (e.g., "car," "tree," "house," "man") or colors
- Writing or writing name – the ability to write letters in isolation on request or to write one's own name
- Phonological memory – the ability to remember spoken information for a short period of time

2) Five early skills moderately predictive of later literacy achievement

- Concepts about print – knowledge of print conventions (e.g., left-right, front-back) and concepts (book cover, author, text)
- Print knowledge – a combination of elements of AK, concepts about print, and early decoding
- Reading readiness – usually a combination of AK, concepts of print, vocabulary, memory, and PA
- Oral language – the ability to produce or comprehend spoken language, including vocabulary and grammar
- Visual processing – the ability to match or discriminate visually presented symbols.

According to the NELP report, these 11 early literacy skills consistently predicted later literacy achievement for both preschoolers and kindergartners. However, Shanahan (2007:4) points out that while growth in all of these early literacy skills stimulates conventional literacy learning, it is also true that there is a reciprocal relationship between literacy and these skills: "Students can begin to learn conventional literacy without fully

mastering all of the precursor skills, and can even learn some of these precursor skills from literacy."

Adams (1990) reviewed and analyzed various studies of basic reading and reading readiness capacities among young children. She emphasizes the necessity of rapid, effortless, and automatic word recognition skills as a critical element to skillful reading comprehension. She asserts that the knowledge of the letters of the alphabet and awareness of the corresponding speech sounds or phonemes are strong predictors of the ease or difficulty with which a child learns to read. Adams concludes about decoding skills in the following (ibid.:416):

> "In summary, deep and thorough knowledge of letters, spelling patterns, and words, and of the phonological translations of all three, are of inescapable importance to both skillful reading and its acquisition."

Kudo and Bazan (2009:9-10) noted in their working paper for the World Bank that there are five critical skills of beginning reading: phonemic awareness, phonics, fluency, vocabulary and text comprehension. The summary of these 5 key elements of beginning reading skills and their test components are presented in Table 10:

Table 10: Five key beginning reading skills

Reading Skill	Test component
Phonemic awareness (one-on-one oral test)	Student's knowledge of how sounds make words
Phonics (one-on-one oral test)	1) Letter Recognition: identifying letters of the alphabet by name; 2) Pseudo-word Decoding or Nonsense Words: knowledge of letter-sound correspondences as well the ability to blend letters together to form unfamiliar "nonsense"; 3) Word Reading: correctly identifying words in a sight-word list.
Vocabulary (oral or written test)	Asking a student 1) to provide a name for pictures (expressive vocabulary), or to match spoken words with pictures (receptive vocabulary); 2) to provide a word that best matches a definition presented verbally by the

	teacher (expressive vocabulary); to provide a definition to a word (receptive vocabulary); 3) to select a word that does not belong in a group of words; 4) to provide a synonym or an antonym for words; and so on.
Fluency (one-on-one-test)	To ask a student to read a passage aloud for one minute to examine the student's oral reading fluency rate.
Reading comprehension	1) Question answering: For each passage read, students provide answers to short-answer questions, which could be literal (factual questions about the text), inferential (making logical connections among facts in text or drawing from ideas implicit in the text), or critical (using analysis or making value judgments about what was read). 2) Passage recall: requiring students to retell the story in their own words after reading it putting a time limit to this process, such as four or five minutes. 3) Cloze (or maze): filling in missing words from a passage. 4) Asking students to read sentences and state whether they make sense or not.

Source: Kudo & Bazan, 2009

Based on the goals in literacy acquisition of Lee (1982:15), Matthews et al. (2003)[31] abridged the definition of literacy skills as follows:

> "Literacy skills are those skills which enable a learner to read and write with independence, comprehension and fluency."

They also illustrated various kinds of literacy skills as shown in Table 11:

Table 11: Literacy skills

Literacy skills	Definition	Example
Reading Readiness skills	The ability necessary for a person to begin the process of learning to read.	Aural phonemic awareness Teaching someone to handle a book correctly Using a pencil correctly Understanding and interpreting illustrations Discerning shapes Understanding the alphabetic principle Understanding some concepts and conventions of print
Fluency skills	The ability to see larger segment and phrases as wholes as	Immediately recognizing letters and frequent clusters of letters Learning frequent words by sight

[31] Delle P. Matthews, Trudy K. Stewart, and Leah B. Walter (2003) contributed to summarize various literacy skills concisely in the LinguaLinks Library 5.0, the software developed by SIL International to aid linguistic data collection and publishing. The directory is Lingua Links \ Library \ CWEdition \ Litera50 (nfo) \ Literacy Bookshelf \ Glossary of literacy terms \ Glossary (Literacy):L \ What are literacy skills?

Literacy skills	Definition	Example	
	an aid to reading and writing more quickly with a minimum of effort.	Seeing phrases as wholes Using prediction skills within the phrase or clause	
Reading skills	Specific abilities which enable a reader - to read the written form as meaningful language - to read anything written with independence, comprehension and fluency, and - to mentally interact with the message	Word attack/decoding skills – the ability to convert graphic symbols into intelligible language	Seeing the component parts of words Blending these parts into new words Recognizing syllable patterns Recognizing symbols for consonant/vowel sounds Recognizing symbols for tone and other suprasegmental features Recognizing punctuation and space Using the above skills simultaneously with comprehension and critical reading skills
		Comprehension skills – the ability to use context and prior knowledge to aid reading and to make sense of what one reads and hears	Understanding that print conveys meaning Using context as an aid to reading Using prior knowledge as an aid to reading Using predictability as an aid to reading
		Fluency skills – the ability to see larger segments, phrases, and groups of words as wholes	
		Critical reading skills – the ability to analyze, evaluate, and synthesize what one reads. They are the ability to see relationships of ideas and use them as an aid in reading.	Seeing questions and expecting answers Seeing cause and effect Seeing steps in a process Seeing comparisons Seeing generalization and itemization
Writing skills	Specific abilities which help writers put their thoughts into words in a meaningful form and to mentally interact with the message	Comprehensibility skills	Understanding that writing is communicating messages or information.
		Fluency skills	Recognizing the linear sequence of sounds Mastering writing motions and letter shapes Recognizing the chunking of words Recognizing the need for space between words Writing quickly

Literacy skills	Definition	Example	
		Creativity skills	The ability to write freely anything the learner wants to write
Numeracy	A mastery of the basic symbols and processes of arithmetic	Numbers Addition & subtraction Simple multiplication & division Simple weights and measures Money counting Telling time Reading calendar	

Source: Glossary of literacy terms in the LinguaLinks library

2.6 Performance levels of adult literacy

A set of valid and appropriate performance levels of adult literacy can provide a good means of understanding, interpreting, and reporting the result of literacy assessment to the various audiences concerned about adult literacy. It also permits comparisons different assessment results in different time periods. The National Resource Council (NRC, 2005) describes in detail the processes and procedures of developing performance levels, and defines several terms related to the determination of performance levels as follows:

- Performance level: a range of scores that reflect similar levels of knowledge, skills, and capabilities as measured on a test
- Performance-level description: the description of the knowledge, skills, and capabilities test takers need to demonstrate in order to be classified into a specific performance level
- Cut score: the score that separates one performance level from another performance level
- Standard setting: the procedures used to determine the cut scores.

The NRC developed five performance levels for each of the three types of English literacy for the 2003 NAAL results: non-literate, below basic literacy, basic literacy, intermediate literacy, and advanced literacy. A brief description of each level is as

follows (NRC, 2005:6):

- Non-literate: may recognize some letters, numbers, or common sight words in everyday contexts.
- Below Basic Literacy: may sometimes be able to locate and use simple words, phrases, and numbers in everyday contexts and perform simple one-step arithmetic operations.
- Basic Literacy: is able to read simple words, phrases, and numbers in everyday contexts when the information is easily located and able to solve one-step problems.
- Intermediate Literacy: is able to read and use written materials to locate information in denser, less commonplace texts, summarize information, draw simple inferences, and make use of quantitative information when the arithmetic operation is not easily inferred.
- Advanced Literacy: is able to read and use more complex written material to integrate multiple pieces of information, perform analytical tasks, draw more sophisticated inferences, and make use of quantitative information when more complex relationships are involved.

In his 1990 article, Wagner proposed four literacy levels for assessment: non-literate, low literate, moderate literate, and high literate. Then, he revised them as none or non-reader/writer level, prerequisite level, basic level and advanced level, more specifically based on a matrix of reading, wiring and numeracy skills in his 2004 paper.

For the research of reading skills of the Machiguenga, an ethnolinguistic group of the southern jungle of Peru, Davis (2004:124) adopted Barr and Johnson's definition of reading – reading is a relationship between comprehension, prior knowledge, and skill with print. She devised three different test sets for three literacy levels, setting the standards for the Machiguenga readers as follows (ibid.:127-129):

- Basic or functional level: Able to read material familiar in daily experience and language genre which, potentially, employs all of the syllables of the language, while meeting at least the following minimum standard: 92 percent accuracy, a score of 2 for fluency (on a scale of 1 to 5), a score of 3- in comprehension (on a scale of 1 to 5), and a rate of

eighty syllables per minute.

- Intermediate level: Able to read with comprehension material unrestricted as to vocabulary and syllable patterning but moderately sophisticated in language genre and partially unknown in content, while meeting at least the preset minimum standards listed above.
- Advanced (full) skill: Able to read unrestricted texts of formal genre which contain new information and abstract concepts, while meeting at least the preset minimum standards listed above.

In addition, she employed two other working definitions of non-/semi-literate as follows:

- Nonliterate: A person who does not know how to read or write and has had no literacy instruction of any kind.
- Semiliterate: A person who has acquired some notions of reading but who, on an easy story about everyday events, could not meet the preset minimum standards listed above.

Along with Davis' study, the *Eritrea national reading survey* (Ministry of Education of the State of Eritrea, 2005) also provides a valuable resource for setting tentative standards for the Eastern Tamang readers since the situation of Nepal is much more similar to Eritrea than that of the developed western society. As far as I understand, there exist no standards or criteria of literacy levels officially developed for adult learners in Nepal. Therefore, Davis' and the Eritrea study as well as the SQC approach based on the BLCs assessment model (see Table 8) would become great resources to refer to for my attempt to set tentative standards or criteria for the Tamang and other minority peoples in Nepal. Depending on how many literacy levels can be set for the Eastern Tamang adult learners, different sets of test item pool would be devised according to these levels.

2.7 Pilot testing the assessment instrument

Many authors or researchers of literacy assessment emphasize the importance of pretesting or pilot testing the assessment instrument. Wagner (2004:35) noted that "a 'testing the test' development process is essential to enhance the reliability, validity, utility, and feasibility of the measures themselves before broad assessment is undertaken." Comings (2009:3) described the development process of the literacy assessment instrument as three phases: design phase, tryout phase, and pilot phase. As he noted, the goal of a tryout with a small sample of population is to find out whether the testing instrument is too easy or too difficult and whether or not it is measuring differences between test takers with different levels of literacy skill (ibid.:8). Similarly, Walter and Davis, the Eritrea National Reading Survey team, pointed out that the results of the pilot test were used to revise the instruments used for the final reading survey (Ministry of Education of the State of Eritrea, 2005:17).

The first sample draft (English version) of the literacy assessment for the Eastern Tamang adult learners also needs to go through the tryout or pilot testing phase. It would also be sent to several MT-base adult literacy programs such as Magar and Tharu to be rendered into different mother tongues and to be tested in one or more of their literacy classes. More detail of pilot testing will be discussed in Chapter 5 which deals with the methodology of literacy assessment.

3 CONSIDERATIONS FOR DEVELOPING A LITERACY ASSESSMENT INSTRUMENT IN NEPAL

As literacy is a means to broader ends for individuals and communities, a literacy program should be carefully planned in regards to the essential factors that affect the status and welfare of those individuals and communities (Gray, 1956:252). Likewise, an assessment program is a critical means to identify and serve significant information needs of diverse stakeholders involved in a literacy program. Thus, the process of developing a literacy assessment instrument should also be carefully planned to meet these needs. However, there is little literature giving clear guidelines on the assessment of adult literacy in non-Indo-European languages. This chapter aims: 1) to derive general guidelines for developing an effective and adaptable assessment procedure for the Eastern Tamang learners from the existing literature on the subject of evaluation of literacy in both formal and informal educational programs in industrialized countries; 2) to set a potential Eastern Tamang operational definition of literacy for the purpose of assessment; and 3) to select specific literacy skills and test components and to pre-set or posit minimum skill levels as criteria for success for Eastern Tamang adult learners in the ETLT literacy program.

3.1 General guidelines for a planning literacy assessment

As noted earlier, emphasizing evaluation as an integral part of a learning experience and as a tool for continual improvement, Vella et al. (1998:12) suggest some

characteristics of effective evaluation:

1) Evaluation must be objective. – Evaluation should provide clear evidence to indicate whether a program is leading to desired change or result.
2) Evaluation should identify the important elements of an educational program. – Evaluation should help improve educators' professional judgment for future planning.
3) Evaluation should match the organizational philosophy. – Evaluation should be planned with an understanding of the purpose or mission of an organization.
4) Evaluation measures should be identifiable and accessible. – Evaluation should be designed to be conducted within the structure and resources of the educational program by the people responsible for it.
5) Evaluation should focus on both the outcomes and the process. – Evaluation should provide answers to two critical questions: "Did we accomplish our objectives?" and "Did we accomplish them in an effective and efficient way?"

These guidelines suggest four axioms of evaluation as follows (ibid.:13):

1) Evaluation does not just happen. – Evaluation will not occur unless carefully planned and managed.
2) Evaluation must be done by experts. – Judgments about the subject matter expertise of instructor or learners' ability to apply what they have learned after they return to their job are made best by people who are themselves expert in the subject area.
3) Effective evaluation returns more than it costs. – Before evaluation the organization must determine what information is needed and how it will be used so that evaluation results would be able to add value to the organization.
4) Evaluation can be accomplished in many ways. – Careful selection of evaluation tools needs to be made to ensure the tools are appropriate to an evaluation philosophy, a particular program design, the time and resources of the organization, and the skills and interests of the educators and learners.

Even though Vella et al. suggest these general guidelines for educational program evaluation, they still provide a significant theoretical framework of literacy assessment. It

is because literacy assessment is the essential element of literacy program evaluation, which can provide direct, objective and quantitative data of program participants. Therefore, from these characteristics and axioms of effective evaluation, some basic principles can be derived for developing a literacy assessment tool and its development procedure for the adult literacy programs of Eastern Tamang people and other indigenous groups in Nepal.

3.1.1 Planning a literacy assessment as an integral part of a literacy program plan

Development of literacy assessment instruments and procedures should be planned as an integral part of an adult literacy program plan from the very beginning. It should not be ignored or isolated from the program. According to the National Research Council (2001:54), "educational assessment does not exist in isolation, but must be aligned with curriculum and instruction if it is to support learning." I often hear from both local and expatriate literacy practitioners that it is not easy to administer a test because the act of being assessed or evaluated is met with fear or reluctance on the part of adult learners and their teachers as well. However, literacy assessment for adult basic education, as well as other educational assessment, seeks to determine how well learners are learning and provides feedback to learners, teachers, learners' families, policy makers, and the public about the effectiveness of educational services (ibid.:1). Literacy assessment is useful and beneficial for the following reasons (Lien, 1976:118-119):

- Tests may improve the instructional program. – Teachers can use data from tests to improve materials, techniques, goals, and approaches when they plan the best instruction for their students.
- Tests may facilitate curriculum revision. – Having data on the ability and

achievement levels of learners will assist teachers and curriculum designers to plan the scope and sequence of teaching contents or subjects with respect to the various levels of the learners.

- Tests may assist in educational and vocational counseling. – Tests can assist teachers in educational or vocational counseling. Tests may also assist learners in self-awareness and help learners match abilities and achievement with job specifications.
- Tests may help the administrative staff appraise the educational program. – Tests, along with other data, can help the administrator evaluate how well the organization or school is reaching its educational objectives and philosophy.

In addition to these reasons, it is worthy to note that testing can also give learners a clearer idea of how far they have progressed in their mastery of literacy.

Vella et al. (1998:19) pointed out that developing evaluation separately – particularly as the program is ending – is usually time-consuming and expensive because it will take additional time to plan and implement and will require spending part of a limited budget. It is also true for developing a literacy assessment instrument for a literacy program. If it can be developed along with the curriculum and instructional materials, the assessment development procedure may require much less time and effort to be consistent with what the program actually provides for the participants and the ultimate goal of the literacy program.

3.1.2 Formulating and documenting critical decisions for an assessment plan

Critical decisions made for planning literacy assessment must be clearly formulated and documented. Vella et al. (1998:15) provide an example of evaluation planning with the five core questions and several alternatives to be chosen by the planners. These questions and alternatives shown in Table 12 can be adapted to articulate

the purpose, content, methods, and timing of literacy assessment in Nepal as well.

Table 12: Questions and alternatives for evaluation decisions

Evaluation decision	Alternatives
1. What is the purpose of the evaluation?	1) To aid in the design of the program 2) To provide feedback to learners and instructors during the program 3) To determine if learners developed important knowledge, skills, and attitudes as a result of the program 4) To determine if learners were able to use what they learned after completing the program 5) To determine if the program had the anticipated impact on people and organizations 6) Other purposes important to your program
2. What should be evaluated?	1) Changes in learners' knowledge, skills, and attitudes resulting from the program 2) Changes and improvements in the organizations for which the learners work 3) The design of the educational program, methods and procedures used, and instructor effectiveness 4) Other factors and results important to your program
3. What are the sources of evaluation information?	1) Learners' demonstrated knowledge, attitudes, and skills 2) Work completed by the learners 3) The instructor's perceptions and observations 4) Evaluation experts 5) Co-workers, supervisors, and others who interact with the learner 6) Other sources that are a part of your program
4. What are the methods for gathering information?	1) Formal or informal procedures 2) Direct or unobtrusive data collection 3) Designing specific evaluation tools or using existing learning activities for data collection 4) Attitude surveys, knowledge tests, or observations of performance 5) Oral, written, or demonstration activities 6) Other methods appropriate for your program and learners
5. When should evaluation be completed?	1) Before the program begins 2) Anytime during the program 3) Immediately at the end of the program 4) Some time after the program has ended when learners have had the opportunity to apply what they have learned 5)Other times when information is needed

Source: Vella et al., 1998:15

In literacy assessment planning, an operational definition of literacy in a particular context should first be made for the assessment purpose. UNESCO enumerates several

characteristics of essential elements of an operational literacy definition as follows (2005:21):

- Understood in the framework of communication, as one strategy among others;
- Related to text and the written word;
- Including the manipulation of numbers - numeracy;
- Giving importance to context;
- Implying some ability, skill or knowledge;
- Concerned with use in relation to life goals;
- Linked to participation in society;
- Multi-dimensional, with connections among all of these characteristics.

The rationale, the purpose or main objectives (including target group to be assessed), the use, and methodology of literacy assessment should also be elaborated in accordance with the identified operational definition of literacy. Lien (1976:120) offers a comprehensive checklist, as shown in Table 13, identifying factors affecting the success of a test program in school contexts. This checklist indicates crucial elements of literacy assessment that assessment committees should consider in out-of-school contexts as well.

Table 13: A comprehensive checklist for a testing program

1. Purposes of the assessment program - clearly defined - understood by parties involved	2. Choice of Tests - valid and reliable - with appropriate difficulty level - with adequate norms - easy to administer and score - economical - best available for purpose
3. Administration and scoring - administrators well trained - all necessary information provided - scores adequately instructed if hand-scored - arrange for machine-scoring, if possible	4. Physical conditions - sufficient space - sufficient time - conveniently scheduled

5. Utilization of Test results - definite plans for use of results - provision for giving teachers all necessary help in using scores - provision for systematic follow-up on use of results	6. System of records - necessary for purpose - sufficient for purpose - convenient form for use - computer printouts, if possible, with labels for cumulative folders
7. Personnel - adequately trained for the purpose	8. Affiliated research - full advantage taken of results - provision for special studies, analyses, etc.

Source: Lien, 1976:120-121

In terms of affiliated research and analyses as Lien mentioned above, there may be a number of quality resources of children's formal education in developed countries and/or Multi-lingual Education (MLE) even in developing countries. However, this cannot be taken for granted in the case of Non-formal adult education in Nepal as well as most third world contexts. Thus, an assessment committee organized to develop a literacy assessment instrument for adults should plan carefully to produce a quality report based on reliable analysis of valid data.

3.1.3 Capacity building of local and national human resources for an assessment plan

Literacy assessment should be designed, administered, and interpreted by trained personnel or expert staff because "assessments necessarily comprise a variety of expertise" (Wagner, 2008:664). Such experts include policy makers, psychometricians (test designers), teachers/instructors, interview specialists/data collectors, and data analysts. As noted earlier, an effective and economic assessment should be designed and conducted within the structure and resources of the educational program by the people

responsible for it. According to Wagner (2004:35), one way to build human capacity is identifying stakeholders and client groups, engaging them in identifying their needs, and enlisting them to find qualified personnel. However, one is not likely to find qualified local and/or national human resources already available for literacy assessment. Thus, in-service program or collaborative capacity-building for local and national experts and consultants across administrative boundaries is necessary to develop legitimate and cost-effective assessments and to obtain valid and reliable results. Furthermore, readily available aids – such as manuals for developing assessment instruments and procedures in indigenous societies – should be developed before or along with the capacity-building and the assessment.

3.1.4 Ensuring high quality in instrument construction, data collection and analysis

Credible, high-quality assessment instruments are generally characterized by objectivity, validity, and reliability. Objectivity in assessment refers to measuring individual's performance without rater bias. According to Moran (1997:15), an assessment instrument is objective "if different people would score the answers for the same person on the same test in the same ways." Even though there is no completely objective assessment, there are ways to enhance the objectivity of literacy assessment. Vella et al. (1998:19) assert that evaluation planning should be integrated into program planning because "evaluations are often less objective if they are decided upon after the structure and delivery of the program have been determined." One strategy for enhancing

objectivity is formulating the goal, target population, norms, and methodology of assessment before the program begins. Another is creating assessment item pools or a bank of test questions and estimating their validity to ensure significant objectivity. According to Moran (1997:51), developing a large pool of items for each learning objective includes writing new test items, saving successful items, improving items that have caused problems, and writing altered forms of existing items.

Validity and reliability are fundamental cornerstones of any credible assessment instruments. The general definition of validity is "the extent to which any measuring instrument measures what it is intended to measure" (Lewis-Beck et al. 2004:1171). According to Black (1999:298), test items are only a sample of the possible tasks which a learner could carry out and inferences of how well the learner would do on other tests or in other situations are made from the performance on the sample. Validity is "an indication of how accurate these inferences are, which obviously depends on how skilled we are in writing and selecting questions for the test" (ibid.) Among various types of test validity, construct validity (with content-related and criterion-related/predictive validity as subcomponents) is involved in appropriate construction and utilization of test items (Iowa Department of Education, 2005:2). Content-related validity refers to the extent to which items measure what they are intend to measure or "whether or not a test measures what it claims to measure in the situation in which it is used" (Moran, 1997:5). Criterion-related or predictive validity refers to the ability or effectiveness of an instrument in predicting something it should theoretically be able to predict (Iowa Department of

Education, 2005:2). A measuring instrument can be said to be relatively valid when it accurately predict the results on some other, external measure, or criterion (Lewis-Beck et al.:1171). For example, one validates a written reading test for adults in a literacy program by showing that it accurately predicts how well they can actually read and understand printed materials in real life contexts. Identifying proper literacy types/domains and skills to be assessed, setting minimum literacy skill levels, and creating descriptions of these skill levels can help enhance the validity, that is, the accuracy of a literacy assessment instrument in what it is supposed to measure.

Reliability refers to the consistency and repeatability/stability of an assessment instrument, or "the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects" (Colosi, 1997). If the same learners make the same or similar scores on the same test given two or more times, that instrument is considered reliable. According to Colosi, there are two typical strategies for estimating reliability: 1) using a test and retest strategy by measuring at two separate times and computing the correlation between the two separate measurements, and 2) establishing internal consistency by grouping questions in a questionnaire that measure the same concept and computing the correlation between two or more different groups of questions measuring the same concept.

Wagner (2004:36) points out that the quality of data collection and processing is essential to ensure both the reliability and validity of any measurement. He also suggests pretesting and pilot testing as cost-efficient ways to increase quality in all facets of

literacy assessment by identifying numerous problem areas before actual assessment. In terms of data analysis, Wagner states that multivariate statistics should be used whenever the data permit an analysis of competing independent variables (for example, education and income) because these analyses can become the basis for developing parameters for policy recommendations at the national or program level. Wagner also proposes several guidelines for designing cost-efficient measurement instruments and methods that offer high information value for literacy assessment as follows (ibid.:35-36):

- Develop standards of performance, measurement scales, and basic performance levels.
- Use functional, performance-based tasks and tests, rather than academic, school-based ones.
- Strive for contextual relevance rather than national comparability.
- Develop a specific set of task items that can efficiently measure literacy skills, while acknowledging the fact that there is no universal test that has the same meaning for every subgroup.
- Plan for an on-going process of test construction, revising the test, and validation, since the literacy measures (or revisions of them) will likely be used both at national and local levels over numerous years.
- Plan to share instruments and report analyses of strengths and weaknesses of tests and tasks across different kinds of users (such as census bureaus, NGO programs, national and international agencies).

Emphasizing that good administration is essential to obtaining valid results, Lien (1976:136-137) offers the following practical principles to enable test takers to approach standardized tests with confidence:

1. Principles to call forth the pupil's best efforts.
    1) Provide for a favorable testing environment.
    - Give the test in a room away from direct noise.
    - Give the test in familiar surroundings.
    - Provide for proper light, heat, and ventilation.
    - Arrange the desks and/or tables and chairs properly.

- Plan to have all distractions eliminated. Put a sign on the door: Testing; Do Not Disturb.

2) Provide for the proper motivation of the learner.

- Explain the purpose of the test.
- Emphasize the guidance use of the results.
- Indicate how his or her status will be affected.
- Emphasize that it will be an enjoyable task.
- Solicit his or her attention and cooperation.

2. Duplicate as nearly as possible the prescribed conditions under which the test was standardized.

1) Be completely familiar with the manual.

2) Read over the complete test booklet.

3) Rehearse reading directions aloud several times.

4) When giving the test, read the directions verbatim; do not try to memorize directions.

5) Follow the timing precisely.

6) Use the most accurate timepiece available (a stop watch or an ordinary watch with a sweep second hand).

7) Keep a time chart.

8) Remember, the only help that can be given a learner is that which is indicated in the manual. In general, questions of a mechanical nature can be answered (e.g. "Where do I put the answer?", "May I use another pencil?"). ANY QUESTIONS REGARDING CONTENT CANNOT BE ANSWERED. The response should be on the latter type, "I'm sorry, I cannot help you; if you do not know it, go on to the next question." Your job is to keep them moving on the test.

9) Go over the sample items carefully.

10) Ask if they have any questions BEFORE the actual test starts.

11) Supervise during the test, but do not disturb.

12) Test only the number you can adequately supervise at one time. (The general rule is that there should be one supervisor for every 25 learners).

Lien (1976:137-138) also provides several principles for scoring tests accurately, particularly when test takers or teachers should score the tests by hand instead of

machine-scoring:

1. General Administration
    1) There should be a meeting of all teachers concerned, at which the supervisor would actually teach the proper procedure for scoring the test.
    2) The manual and scoring key should be studied and discussed.
    3) An actual demonstration should be presented.
    4) The specifics of scoring should be discussed – kinds of symbols to use in marking, how double checks should be made, the type of pencil to use, and where and how to record the score.
2. Actual Scoring: If it is possible for two teachers to work together, the process is completed more quickly, and with less chance for error, since the second person checks the first's scoring as the process continues.
    1) Reread the scoring directions so that they are clearly in mind.
    2) Score the same page on all of the tests before proceeding to the next page. This makes the procedure more rapid and reduces the chance of error.
    3) Use the symbols agreed upon for marking or follow the suggestions in the manual. Most test parts ask for total right. Therefore, you may mark the correct ones with a C or mark the wrong ones with a tick (V) counting omissions as wrong. Sometimes teachers use a + for a correct one, - for an incorrect one, and 0 (zero) for omitted items.
    4) Draw a horizontal line under the last item attempted.
    5) When the tests are scored, repeat the process using a different colored pencil to check your scoring.
    6) Count the number right if this is the procedure, or apply the correction formula, and place the final score in the space provided. Recheck your result.
    7) Transfer the score to the profile page.

3.1.5 Developing authentic assessment items

Assessment items should be based on authentic language and tasks which are grounded in the cultural and social context of the learners. Inauthentic or peculiar language and tasks are likely to reduce learners' capacity for applying their prior

knowledge to the task, thus reducing assessment validity (Davis, 2004:49).

Authentic/real-life tasks can provoke more interest and motivation for adult learners to improve their literacy skills. Jones (1997:123) introduces Murphy's guidelines which emphasize the importance of authentic test items, as follows:

> "Each task must look real. If the stimulus is to be a medicine label, whenever possible obtain an actual label rather than merely typing the text on a separate piece of paper. The same holds true for pamphlets, forms, contracts, newspaper advertisements, etc. The task must copy as faithfully as possible the real world of reading. As a task writer, one of your major concerns will be the face validity of the materials you produce. They must look 'real', have some evident benefit to the respondent, and be directly related to the kinds of reading most people do."

Davis (2004:48-49) provides some other scholars' guidelines on the same issue as follows:

- Gray – "The best way to measure functional literacy is to ask students to engage in literacy activities – such as reading and understanding short notices posted in the village or reading and writing a letter. Reading from the types of materials most familiar (songs, sacred literature, newspapers, etc.) are recommended" (cited from *The teaching of reading and writing*, 1961:25).
- Anthony et al. – "Evaluation should be based on natural language (authentic texts), which are contextually grounded and therefore facilitate comprehension" (cited from *Evaluating literacy: A perspective for change*, 1991:77).
- Klich and Davidson – "One must beware of the hazards implicit when subjects in one culture are required to respond to stimuli and procedures designed by researchers from another culture" (cited from "Australian aboriginal competence in cognitive functions" in J.R. Kirby. (ed.) *Cognitive strategies and educational performance*. 1984:155-202. Orlando, FL: Academic Press.)

Davis (ibid.:49) also highlights additional critical elements included in Klich and Davidson's rigorous and culturally-oriented testing procedures: 1) instructions must be provided in the vernacular language, 2) tests should be administered by the regular

mother tongue speaking teacher or within sight and hearing of other mother tongue speakers, 3) practice items should be included which assure comprehension of each procedure, and 4) test instruments should be refined based on previous testing.

Moran (1997:49-51) offers the following guidelines for writing natural and clear test items:

1) All the test items should be written "with the fewest and the simplest words that convey their meaning in order to minimize reading and language skills as a barrier to successful performance on the test."
2) Ambiguities should be avoided when individual test items are written. When using fewest words conflicts with avoiding ambiguities, the latter should take precedence over the former.
3) Any clues to correct answers should be avoided.
4) Soliciting reviews or critiques from colleague practitioners and other stakeholders outside the learning setting is good practice to enhance the quality of the test.

3.1.6 Communicating data-driven assessment results

Assessment results should be communicated to all appropriate stakeholders. The assessment results of individual learners, as well as all materials, answer sheets, and data gathered from the assessment should be treated as confidential information. Learners should be informed that results will be seen only by properly authorized persons such as teachers, supervisors, the director of the program, and local, national and/or international policymakers and donors.

According to Anthony et al. (1991:144), effective "communication is a foundational component of a good evaluation model." Once data about individual learners have been gathered, analyzed, and interpreted, inferences or conclusions should

be made on the basis of the data and reported effectively to stakeholders at various levels. These stakeholders are likely to have different interests in individual and sub/group profiles as well as in the policy implications of data analyses and interpretations (Wagner, 2004:36). The following purposes enumerated by UNESCO (2005:22) indicate some of the proper uses of assessment data:

- To set priorities for resource allocation at national or international level;
- To survey achievement and the effectiveness of delivery systems;
- To inform and improve literacy acquisition methodologies;
- To identify neglected or hard-to-reach population groups and provide a basis for innovative programs;
- To illuminate areas for concerted action and cooperative ventures;
- To strengthen the movement for literacy and provide a basis and incentive for
- good practice;
- To give feedback to learners and raise their levels of confidence;
- To motivate literacy workers, showing them that they are able to make a difference.

Therefore, as Wagner (2004:36) pointed out, it is likely that more than one report (or at least various sub-reports) will be required in order to address the relevant issues of the diverse consumers of the assessment results.

3.2 Operational definition of literacy and literacy domains for the Eastern Tamang people

As mentioned earlier in section 2.4, there is no universal standardized definition of literacy. The construct of literacy no longer simply implies “the acquisition of intellectual skills associated with basic academic competencies associated with reading and writing” (Kirsch, 2001:5). With the growing awareness of the importance of lifelong learning, literacy is rather perceived as “an advancing set of skills, knowledge, and

strategies that individuals build on throughout their lives in various contexts and through interactions with their peers and with the larger communities in which they participate" (ibid.:4). Therefore, the initial work of a committee impaneled to develop the assessment plan is to define literacy with respect to views and demands of literacy in the focal society. The following questions would help guide the committee in determining an operational definition of literacy for developing appropriate measures of literacy assessment:

1) For what purposes do people in your community want to be literate? – for example, parenting, participating economic/income generating activities, acquiring/exercising citizenship, individual advancement in school or at workplace, etc.
2) What kinds of literacy practices are often observed in your community and in the wider society you participate in?
3) What kinds of materials are usually used in such literacy practices?
4) What types and levels of literacy skills are necessary for functioning in your community and in the wider society?

If a national definition of literacy and/or a National Adult Education Policy exists, these are fundamental resources for the committee as well. For example, Bangladesh's Literacy Assessment Survey (LAS) 2008[32] adopted the national definition of literacy which NFE policy 2006 defined very similarly to the 2005 UNESCO definition, as follows:

"Literacy is the ability to read, understand, interpret, communicate and compute

[32] Literacy Assessment Survey (LAS) 2008 was conducted to address the issue of reliable benchmark data on adult literacy status in Bangladesh. It was conducted with UNESCO's technical and financial support following the similar methodologies used in the Education Watch 2002 and Assessment of Literacy Status in Bangladesh 2005 (Bangladesh Bureau of Statistics and UNESCO, 2008:xiv).

> in verbal and written forms in varying contexts. It involves a continuum of learning that enables individuals to develop their potentials and knowledge base and to participate fully in community affairs and wider social and development context" (Bangladesh Bureau of Statistics and UNESCO, 2008:4).

The following definition of literacy adopted by earlier surveys of LAS 2008 is also similar to the definition given in the NFE policy 2006 of Bangladesh:

> "Possession of skills in reading, writing and numeracy related to familiar contents and contexts and the ability to use these skills in everyday life in order to function effectively in society" (ibid.).

As introduced above, the government of Nepal defined literacy as the ability "to read and write short and simple sentences related to daily life in his/her mother tongue or national language with understanding" and the ability "to communicate with others and perform simple tasks of calculation" (UNESCO and ACCU, 2003). According to the NFE Policy (2007), the government of Nepal seeks "to provide the academic and practical knowledge, skills and information to different age and levels of learners" and to attach life skills to both the contents and methods of teaching/learning. Based on both the national and international (that is, UNESCO's) definitions of literacy, I propose, as an initial trial, a definition of mother tongue literacy for the Eastern Tamang people as follows:

> Literacy is the ability to identify, understand, interpret, create, communicate, compute, and use printed and written materials related to varying contexts of daily life in the Eastern Tamang language. Literacy in the Eastern Tamang language involves enabling individual Eastern Tamang people to develop their academic and practical knowledge, skills, and potential in order to achieve their goals and to participate fully in their own and wider communities in Nepal.

As suggested above, this definition must be refined or elaborated later by the

assessment committee of local and national stakeholders for the purpose of assessment.

3.3 Selecting/Identifying literacy skills and test components

As Wagner (2004:25-27) noted, even though there are numerous definitions of literacy, these definitions have a common core: understanding, communicating, and using printed and written materials as well as calculating/basic arithmetic/numeracy skills. Through diverse studies on literacy, there has been substantial agreement on what constitutes operationally definable core basic skills: reading, writing, and calculating/numeracy skills. The Indian National Program of Adult Education identified these three basic literacy skills by specified objectives for literacy attainment as follows (Bhola, 1994:35-36):

1. Reading skills
    1) The learner should, at the end of the program, be able to read orally – so pronouncing correctly a simple passage of about five to six sentences in a minute. Such a passage may be from the reading material used at the center and should be preferably in the same letter type.
    2) The learner should be able to read approximately ten to twenty words, of hand-written (bold) material, per minute.
    3) The learner should be able to read with understanding road signs, posters, simple instructions, and some headlines of newspapers for neo-literates.
    4) The learner should be able to read figures from 1 to 100.
    5) The learner should be able to comprehend the material read in items 1), 2), and 3) above, and should be able to answer questions relating to it.
2. Writing skills
    1) The learner should be able to copy out a minimum of ten words per minute from a small passage. The words in the passage may be of not more than four letters. They should also be able to understand what is written.
    2) The learner should be able to take down dictation at the speed of at least seven words per minute.

3) The learner should be able to write on a straight line with proper spacing on ruled paper.

3. Computational skills
    1) The learner should be able to make minor calculation of up to three digit figures involving simple addition, subtraction, multiplication, division, the divisor in case of division and multiplier in case of multiplication should be one digit.
    2) At the end of the course the learner should be in a position to gain a practical knowledge of metric weights and measures.
    3) The learner should be able to know tables up to ten.
4. Application of literacy skills
    1) The learner should be able to read captions, signboards (written road-signs), posters, newspaper headlines, and other communications that come to him in legible and bold handwritten papers.
    2) The learner should be able to write simple letters and simple applications, and fill out forms such as money orders and loan and bank forms.
    3) The learner should be able to keep accounts of day-to-day expenditures and savings, and be able to check entries in their post office or bank pass-book.
    4) The learner should be able to follow and act upon instructions given on bags of fertilizers, pesticides, seeds, medicine, etc.

Although literacy skills have not been specified in such detail in Nepal, the national definition of literacy and the NFE Policy clearly implies the kinds of literacy skills – reading, writing, and calculation skills with life skills embedded in each – necessary for people in Nepal to function effectively in their society. To function properly in their community, Eastern Tamang people in Nepal, as well as other people groups, need to be able to read with understanding whatever printed/written materials they should respond to. They also need to be able to fill out whatever forms they are required to or at least, to sign their names in significant documents. Moreover, they need

to be able to identify time, money, and dates and days/months, and to do simple addition, subtraction, multiplication, and division. Since the literacy classes run by the Eastern Tamang Language Team (ETLT) have also been teaching reading, writing, and basic arithmetic skills to the participants, I am choosing these three basic skills to assess the literacy performance of Eastern Tamang adult learners in Nepal.

3.3.1 Assessment components of reading skills

All the reading skills explored in section 2.5 can be classified into three categories: precursor reading skills/reading readiness skills, oral reading skills, and silent reading skills. Precursor reading skills include the following:

- print awareness – directionality, visual discrimination, visual memories, letter forms, and picture-word associations (Davis, 2004:53)
- phonemic awareness – sound-symbol relationships and word recognition (ibid.)
- phonological awareness – segmenting and blending words, syllables, or phonemes (National Early Literacy Panel, 2009:3).

The assessment of these precursor reading skills can be embedded into both oral and silent reading assessments.

Oral and silent reading skills are different in their main purposes and strategies for reading. Oral reading gives greater focus to word pronunciation while silent reading focuses more specifically on comprehension. Whereas silent reading skills are increasingly required for "skillful" readers, oral reading skills are still important for the following reasons:

1) as a valuable diagnostic tool to assess how much the learners have developed in the process of learning to read.

2) to confirm information to others.
3) in performance situations, such as the reading of plays, poems, story dialogues, or for tape recording (Davis, 2004:50).

Oral reading consists of four measurable components: rate, accuracy, fluency, and comprehension. Rate and accuracy of oral reading are the main indicators of automaticity which is defined as "fast, accurate and effortless word identification at the single word level" and the best predictor of comprehension. On the other hand, fluency involves both automatic word identification and the application of appropriate prosodic features such as rhythm, tone, intonation, and phrasing at the phrase, sentence, and text levels (Hook and Jones, 2002). Comprehension is defined as "the acquisition of information from printed material" (Davis, 2004:55). Hook and Jones explain the relevance of these four components to effective oral reading.

> "Even mild difficulties in word identification can pull attention away from the underlying meaning, reduce the speed of reading, and create the need to reread selections to grasp the meaning. Many students who struggle to learn to read are able, with appropriate instruction, to compensate for initial reading problems by becoming accurate decoders but fail to reach a level of sufficient fluency to become fast and efficient readers." (ibid.)

Silent reading requires word attack/decoding skills, fluency, comprehension, and critical reading skills. Silent reading comprehension is the ultimate outcome of the reading process where all other components interact successfully (Literacy Information and Communication System: Reading components\ Meaning skills\ Silent reading comprehension, March 14, 2011). However, there has been no agreement among researchers on the degree of correlation between oral reading fluency and silent reading comprehension (Davis, 2004:50).

The Dynamic Indicators of Basic Early Literacy Skills (DIBELS)[33] measures the following components of reading: phonological awareness, the alphabetic principle, fluency with connected text, vocabulary, and comprehension. Specified measures for each component and skill to be assessed through the DIBELS measures are presented in Table 14:

Table 14: Reading components and measures of DIBELS

Component	Specified Measure	Skill to be assessed
Phonemic Awareness	Initial Sound Fluency (ISF)	Identifying and producing the initial sound of a given word.
	Phonemic Segmentation Fluency (PSF)	Assesses a child's skill at producing the individual sounds within a given word.
Alphabetic Principle and Phonics	Nonsense Word Fluency (NWF)	Knowledge of letter-sound correspondences and the ability to blend letters together to form unfamiliar "nonsense" (e.g., ut, fik, lig, etc.) words.
	Oral Reading Fluency (ORF)	If accuracy is less than 95%.
Accuracy and Fluency with Connected Text	Oral Reading Fluency (ORF):	Assesses a child's skill at reading connected text in grade level materials.
Comprehension	Oral Reading Fluency (ORF) and Retell Fluency (RTF	Assesses a child's understanding of verbally read connected text.
Vocabulary and Oral Language	Word Use Fluency (WUF)	Assesses a child's ability to accurately use a provided word in the context of a sentence.

Source: University of Oregon Center on Teaching and Learning, 2008:2.

The project of Education Data for Decision Making II (Eddata II), sponsored by the United States Agency for International Development (USAID), has developed the Early Grade Reading Assessment (EGRA) which is an oral assessment instrument

[33] The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) are a set of procedures and measures for assessing the acquisition of early literacy skills from kindergarten through sixth grade. They are designed to be short (one minute) fluency measures used to regularly monitor the development of early literacy and early reading skills. DIBELS were developed originally on the basis of measurement procedures for Curriculum-Based Measurement (CBM), which were created by Deno and colleagues through the Institute for Research and Learning Disabilities at the University of Minnesota in the 1970s-80s. Initial research on DIBELS was conducted at the University of Oregon in the late 1980s and research on DIBELS continues at Dynamic Measurement Group (DMG) and at numerous universities and research institutions around the world. This information comes from https://dibels.uoregon.edu/docs/dibelsinfo.pdf.

requiring about 15 minutes per child. It is a simple diagnostic of individual student progress in reading by testing letter knowledge, phonemic awareness, the alphabetic principle, accuracy and fluency, reading and listening comprehension, and vocabulary. In August 2009, EGRA instruments were developed in six languages of Nepal – Nepali, Tharu, Rana Tharu, Doteli, Magar, and Bajang –for USAID/Washington.[34] The instruments are in use for a national or program-level diagnostic to measure learning outcomes and school effectiveness. The EGRA instruments for Nepal assess concepts about print, passage reading and comprehension. Even though the EGRA instruments aim to test children's oral reading proficiency, they imply some common indicators of reading skills for adult learners as well. Test components of EGRA are listed in Table 15:

Table 15: Test Components of EGRA[35]

Component:	Skill demonstrated by:
1. Letter name knowledge	Provide the name of upper- and lowercase letters in random order
2. Phonemic Awareness	Segment words into phonemes Identify the initial sounds in different words
3. Letter sound knowledge	Provide the sound of upper- and lowercase letters distributed in random order
4. Familiar word reading	Read simple and common one- and two-syllable words

[34] This information comes from https://www.eddataglobal.org/documents/index.cfm?fuseaction=pubDetail&ID=255.

[35] This information comes from the slide 12 and 13 of power point presentation, "Assessing Foundation Skills in Reading" (retrieved [March 14, 2011] from http://www.worldbankrussia.ru/files/244.pdf) done by Amber Gove at the First Read Global Conference: "Developing a Vision for Assessment Systems" in October 2, 2009 (http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTEDUCATION/0,,contentMDK:22365785~pagePK:148956~piPK:216618~theSitePK:282386,00.html. Retrieved on March 14, 2011). Amber Gove, PhD, is a senior education research analyst in RTI's International Development Group and the main author of "Early Grade Reading Assessment Toolkit." Much of her recent work has centered on the development of the Early Grade Reading Assessment, a system-level diagnostic for understanding students' foundation skills in reading (http://www.rti.org/experts.cfm?objectid=B4B6EB11-5056-B155-2CB3A8B946BD3B27. Retrieved on March 14, 2011).

Component:	Skill demonstrated by:
5. Nonsense word reading	Make grapheme-phoneme correspondences (GPCs) through the reading of simple nonsense words
6. Oral reading fluency with comprehension	Read a text with accuracy, with little effort, and at a sufficient rate Respond to literal and inferential questions about the text they have read
7. Listening comprehension	Respond to questions about the text the assessor reads to them
8. Dictation	Translate sound to print, write, spell, and use grammar properly

McShane (2005:13) notes that research on reading has identified five reading components: phonemic awareness, decoding/word identification, fluency, vocabulary, and comprehension. Assessment Strategies and Reading Profiles (ASRP) of Literacy Information and Communication System (LINCS)[36] classifies reading components into two groups: print skills (alphabetics) and meaning skills. Print skills include phonemic awareness, word analysis (or phonics), word recognition, spelling, and fluency. Meaning skills encompass word meaning (listening and expressive), background knowledge, and silent reading comprehension. Among these components, ASRP has selected five key reading components which it conceives as major determinants of reading ability: word recognition, spelling, word meaning, silent reading comprehension, and fluency (oral reading rate).[37]

[36] Literacy Information and Communication System (LINCS) is a national dissemination and professional development system developed by the National Institute for Literacy in accordance with the 1991 National Literacy Act of USA. It provides information on a wide variety of literacy relevant issues, research, practices, and resources. Assessment Strategies and Reading Profiles (ASRP) of LINCS provides research-based assessment strategies to improve reading instruction for Adult Basic Education (ABE) and Adult Secondary Education (ASE) learners in USA. Further information of ARSP is available on the following internet website, http://lincs.ed.gov/readingprofiles/index.htm.

[37] Further information can be retrieved from http://lincs.ed.gov/readingprofiles/MC_Reading_Components.htm.

3.3.2 Assessment components of writing skills

Writing is a critical method of communicating messages and information in various adult contexts. According to Matthews et al. (in Lingua Links Library 2007), writing skills are "specific abilities which help writers put their thoughts into words in a meaningful form and to mentally interact with the message." Writing skills require basic knowledge and skills in usage and mechanics (e.g., punctuation, basic grammar and usage, and sentence structure), comprehensibility (e.g., writing strategy, organization, and style), fluency, and creativity (see Table 11). It is not easy to assess many of these components rigorously and objectively. Moreover, people participating in literacy programs in developing countries are likely to focus on dictation and writing simple messages or information rather than creative writing. Therefore, dictation of syllables, words, sentences with varying difficulty may be the easiest and simplest method of assessing the writing skills of adult learners in Nepal.

3.3.3 Assessment components of numeracy/quantitative literacy

Numeracy or quantitative literacy is essential for adult learners to function effectively in their work and in everyday life. Matthews et al. define numeracy as "a mastery of the basic symbols and processes of arithmetic" (Glossary of literacy terms in LinguaLinks).

The numeracy skills test of the Training and Development Agency for Schools

(TDA)[38] indicates several numeracy components. The numeracy test assesses three areas as follows:

- Mental arithmetic – the ability to carry out mental calculations using time, fractions, percentages, measurements, and conversions;
- Interpreting and using statistical information – the ability to identify trends correctly, to make comparisons in order to draw conclusions, and to interpret information accurately; and
- Using and applying general arithmetic – the ability to use and apply general arithmetic correctly using time, money, proportion/ratio, percentages, fractions, and decimals, measurements (e.g., distance, area), conversions (e.g., from one currency to another, from fractions to decimals or percentages), averages (including mean, median, mode, and range where relevant), and simple given formulae.[39]

The Early Grade Math Assessment (EGMA)[40] assesses the following math skills: oral counting fluency, number identification, quantity discrimination, identification of missing numbers, one-to-one correspondence, addition and subtraction word problems, addition and subtraction problems, shape recognition, and pattern extension (Reuben and Crouch, 2009). These test components are further described in Table 16:

Table 16: Numeracy components of EGMA

Test component	Task description
Oral counting fluency	To assess the ability to produce numbers fluently The task usually begins with the number 1, and asks children to continue counting until they reach the highest number they can before making a counting error. The score is based on the last correct number the child says previous to making an error or at the end of a minute (This is a timed task to elicit a fluency measure.)

[38] The Training and Development Agency for Schools (TDA) is the national agency and recognised sector body of UK, which is responsible for the training and development of the school workforce. This information was retrieved from http://www.tda.gov.uk/about/role-remit.aspx.

[39] This information comes from http://www.tda.gov.uk/trainee-teacher/qts-skills-tests/numeracy/content.aspx.

[40] The Early Grade Math Assessment (EGMA), funded by the United States Agency for International Development (USAID), is a simple assessment developed to measure the extent to which schoolchildren in early primary grades are learning essential foundational math skills (Reubens and Crouch of RTI International, 2009).

Test component	Task description
Number identification	To assess knowledge and identification of written symbols Students are asked to orally identify twenty printed number symbols that are randomly selected from 1 through 100 and placed in a grid.
Quantity discrimination	To assess the ability to make judgments about differences by comparing quantities in object groups This can be done by using numbers or by using objects such as circles and asking which group has more objects.
Missing numbers	To assess the learner's familiarity of numbers and the ability to identify a missing number in a set or sequence of numbers In this task, children are presented with a string of three numbers with the first, middle, or last number in the string missing. Children are instructed to name a missing number in a set or sequence of numbers.
One-to-one correspondence	To assess for enumeration and then cardinality This task aims to assess the number-word counting correspondence, and then whether a child is aware that the last number name signifies the summation of objects presented. Children are instructed to point and count all the circles no smaller than one inch in diameter, and then asked, "How many circles are there?"
Addition and subtraction word problems	To assess the ability to solve oral word problems of addition and subtraction The assessor reads the entire word problem to a child before beginning the task. If the child needs a word problem reread, the assessor rereads it entirely. It can be reread as often as the child needs.
Addition and subtraction problems	To assess knowledge of basic addition and subtraction concepts and the ability to solve addition and subtraction problems presented visually In this task, children are shown a visual representation of the mathematics problem, and also have the problem read aloud to them. Children also have counters available to them. They can use any method in solving the problem.
Shape recognition	To assess the ability to identify specific shapes Children are asked to identify and select specific shapes when presented with an 8½ × 11-inch piece of paper containing shapes (e.g., "put a mark on each of the shapes that is a circle"). The children were expected to respond by identifying and marking all the shapes that corresponded to the specific task/shape requested by the interviewers. The shapes used in this task were circles, squares, triangles, and rectangles.
Pattern extension	To assess children's spatial ability in their recognition of the different shapes and the embedded pattern to be added to Children are presented with a pattern and asked to select a response option for the object necessary to complete the pattern (e.g., ABABA? = A or B). The assessor introduces each pattern extension task to the child and points to the blank(s), asking the child which of the response options will complete the pattern.

Source: Reubens and Crouch, 2009

3.3.4 Selecting test components for Eastern Tamang adult learners

As indicated above, there are numerous test components of literacy assessment. However, there is no instrument that is likely to assess all the components. To develop a

feasible instrument and procedures, a number of test components need to be chosen for the Eastern Tamang adult learners. First of all, to identify test components for reading, writing, and numeracy proficiency of Eastern Tamang adult learners, the following sources were explored and specified:

1) the attributes of the Eastern Tamang orthography
2) the content and cognitive components of the primers used in their MT literacy program, and
3) topics selected for the *Naya Goreto 2065*, the Nepali literacy primer updated in 2008 and used in the national language literacy program.

3.3.4.1 Eastern Tamang Orthography

There have been various attempts to establish a phonemic inventory of both Western and Eastern Tamang languages by local and expatriate scholars. Analyzing the inventories developed by expatriate scholars, it is interesting to discover that there are no voiced stops though some have proposed a distinction between voiceless and 'devoiced' stops. According to Mazaudon's analysis[41], there are 19-20 consonants, 5 vowels, and several diphthongs and triphthongs. He also noted that there were four tones related to breathiness of consonants. Hale[42] collected some data of Sahugaon (northwest from Kathmandu) and suggested that there were 20 consonants and 5 vowels. He noted that

[41] Mazaudon collected data for his MM-thesis(1994) from three Tamang resident areas: Risiankhu, Sahugaon, and Taglung. His inventory of Tamang phonemes is presented in *Phonological inventories of Tibeto-Burman languages* (1996) published by the Sino-Tibetan etymological dictionary and thesaurus project of Center for Southeast Asia Studies, University of California, Berkeley.

[42] Austin Hale is a linguist of SIL, and his wordlist is from Karna B. Tamang, Doreen Taylor, and Fay Everitt. His phonological inventory is also presented in *Phonological inventories of Tibeto-Burman languages* (1996) published by the Sino-Tibetan etymological dictionary and thesaurus project of Center for Southeast Asia Studies, University of California, Berkeley.

vowel length was contrastive for all Tamang vowels which he marked by < : > following the vowel. Varenkamp (2005: Phonology) suggested 19 consonants and 10 vowels as the working Eastern Tamang phonemic orthography. He also noted the tone system of Tamang as below:

> "Along with all the other languages in the Tamangic or Gurung Branch, Tamang is tonal, albeit "semi-tonal or marginally tonal" (Mazaudon 1978:157). The tonal system of a number of languages in Nepal, particularly those of the Tamangic Branch is based on a contrast between clear (or tense) and breathy (or lax) phonation types, resulting in higher and lower pitch 'registers,' respectively" (ibid.: ETCh3).

Interestingly, the translators of the Eastern Tamang Language Team (ETLT) suggested 29 consonants and 10 vowels including all the contrastive long vowels in their working orthography chart (see Appendix E). In the alphabet chart of their primer, there are 29 consonants and 8 vowels without long [u:] and long [o:]. Generally, they follow the rule of consistency, but some inconsistency is found particularly in verbal suffixes of both present and past tense, and the use of the length mark [:]. They do not employ any tone marks which they consider cumbersome and not distinctive enough to mark. They wrote the loan words from Nepali just as they are in Nepali.

3.3.4.2 The content and cognitive components of the primers

The content and cognitive components of the Eastern Tamang Primer Book I and II are presented in Table 17:

Table 17: Contents and cognitive components of Eastern Tamang Primer Book I & II

Content		Cognitive component
Primer Book 1	Primer Book 2	
19 letters – 12 consonants and 7 vowels	37 letters total including 18 new ones – 17 new consonants and 1 new vowel – and 8 half consonants*	Phonemic & phonological awareness letter-sound recognition and production
19 key words and some sight words	18 key words and some sight words	Word recognition and production reading words correctly and fluently
Text and comprehension questions for each chapter		Text reading and comprehension fluency and accuracy explicit and implicit comprehension simple passage, prose, and document reading and comprehension
Numbers 1-100, counting, and simple addition and subtraction	Simple multiplication and division	Numeracy/quantitative literacy number recognition and counting addition and subtraction multiplication and division word problem solving
Writing practice		Print awareness, copying, and dictation letters, words, numbers, and simple sentences
Discussions on issues related to life skills – health, sanitation, family planning, nutrition, and forest conservancy		Collecting useful and valid information, fostering healthy and/or safe attitudes and behaviors, critical thinking, and problem-solving

* Half consonants are the first or second consonants which occur in consonant clusters and are written incompletely to be jointed with following consonant.

3.3.4.3 Topics selected for the newly revised *Naya Goreto 2065*

In the newly revised *Naya Goreto 2065*, several topics which were outdated, negative, and limited to rural areas were removed, and some cultural, educational, and social topics were added, such as house, wedding, the native country with various indigenous people groups, writing letters and getting news, and natural disasters such as floods and landslides. Topics and themes carried over from the earlier version include social and personal life skills such as work, farming, neighbors, clothes, dysentery/diarrhea, sanitation, family planning, nutrition, education, market, forest conservation, and critical thinking about good/bad behaviors.

In terms of numeracy, the revised *Naya Goreto* includes simple multiplication and division with explanations in words, while the former one taught basic addition and subtraction up to three digits.

To assess the knowledge and skills of adult learners in the Eastern Tamang literacy program, a criterion-referenced literacy assessment instrument is designed on the basis of what was explored above and the SQC (or the Basic Learning Competencies) assessment model as well as the NAAL model. The assessment instrument designed for the ET adults is much simpler than the NAAL but more complex with more test components than the BLC model. It is intended for assessing adult literacy performance primarily at program levels even though it can be adopted for national level assessment for various people groups in Nepal. The test items of the instrument will measure the following components shown in Table 18:

Table 18: Test components for Eastern Tamang adult learners

Literacy skill	Literacy domain	Test component	Type of test
Precursor literacy skills	Decontextualized print	1) Book and print awareness – pointing the title, the table of contents, a particular page, a particular punctuation, etc. in a given book	Oral
		2) Understanding and interpreting illustrations	Oral
		3) Discerning shapes – the same or different	Oral
		4) Alphabet knowledge – reading aloud given printed letters and numbers	Oral
		5) Phonological awareness –reading aloud given printed syllables and simple common words and blending letters/syllables to make new syllables/words	Oral
		6) Writing one's own name	Written
Reading skills	Decontextualized print	7) Word recognition – matching written words with pictures, matching spoken words with written words, selecting a word that does not belong in a group of words, and matching a written word that best matches a definition presented verbally or in written form	Oral/Written

Literacy skill	Literacy domain	Test component	Type of test
		8) Word Accuracy– reading aloud words given in the list	Oral
	Prose text	9) Sight word recognition of common words in road signs, labels, leaflets, etc. 10) Accuracy and fluency – reading a written passage aloud as fast as possible 11) Comprehension skills – identifying and locating specific information embedded in prose texts 12) Critical reading skills – analyzing, evaluating, and synthesizing stories, newspaper articles, etc.	Written Oral Oral/Written Written
	Document text	13) Comprehension skills – identifying and locating specific information on a document (e.g., time or place where an event will take place, pay amount and due date on utility bill, transportation schedule)	Written
Writing skills	Decontextualized print	14) Dictation of words, phrases, and simple sentences	Written
Numeracy/ quantitative literacy skills	Decontextualized print	15) Oral counting fluency – counting number 1 through 20 16) Number identification/Decoding – identifying randomly selected numbers between 1 and 100 17) Quantity discrimination – comparing and identifying greater or smaller quantities of objects or numbers 18) Missing numbers – identifying a missing number in a set or sequence of numbers 19) Applied numeracy– telling time, reading money, and reading a calendar 20) Addition, subtraction, multiplication, and division problems	Oral Written Written Written Oral/Written Written
	Prose text	21) Computing skills – performing appropriate arithmetic functions using information given in prose texts	Written Written
	Document text	22) Computing skills – performing appropriate arithmetic functions using information given in documents	Written Written

These components will be assessed in two major types of tests: oral and written. The oral test includes most of test components for measuring precursor skills, oral reading fluency and comprehension skills, and oral counting fluency of numeracy. The written test includes decoding and comprehension skills of silent reading as well as

computing and pattern extension skills of numeracy. Further descriptions and instructions of these two types of tests are presented in the following chapter.

3.4 Setting tentative standards for Eastern Tamang adults

There are no standards of literacy skill levels set for adult learners either in Nepali or any indigenous languages of Nepal. Thus, I intend to propose a set of standards for Eastern Tamang adult learners aged 15 and above, based on various research programs mentioned in Chapter 2. Trial tests or benchmarks must be conducted to confirm the standards of literacy skill levels proposed below.

3.4.1 Standards for reading rate, accuracy, fluency, and comprehension

The Eritrea National Reading Survey (Ministry of Education of the State of Eritrea, 2005) presents the following diverse reading standards proposed by various researchers, as well as its own reading standards used for calculating the reading indices.

Table 19: Standards for silent and oral reading rates

Source: NAEP[43]		Guszak[44]		Barr, Blachowicz, Katz, and Kaufman[45]		
Silent reading (median rate)		Oral reading (minimum rate)		Grade level	Silent reading	Oral reading
				First	30-70 wcpm	
Age	Rate	Grade	Rate	Second	50-100 wcpm	60-100 wcpm
9-year-olds	117 wcpm*	Grade 1	60 wcpm	Third	70-120 wcpm	90-120 wcpm

[43] The Eritrea survey team cited the information from Education Commission of the States. 1972. Reading rate and comprehension, 1970-71 assessment. National Assessment of Educational Progress (Report 02-R-09). Washington, DC: U.S. Government Printing Office. pp.4, 53, and 98.

[44] This information was cited by the Eritrea survey team from Guszak, F.J. 1985.Diagnostic reading instruction in elementary school. New York: Harper & Row.pp.64.

[45] This information was cited by the Eritrea survey team from Barr, R., C. Blachowicz, C. Katz, and B. Kaufman. 2002. Reading diagnosis for teachers: An instructional approach. 4th edition. Boston, MA: Allyn and Bacon. pp.76.

13-year-olds	173 wcpm	Grade 2	70 wcpm	Fourth	90-140 wcpm	110-140 wcpm
17-year-olds	195 wcpm	Grade 3	80 wcpm	Fifth	100-150 wcpm	140-170 wcpm
Young adults	188 wcpm	Grade 4	90 wcpm	Sixth	110-150 wcpm	160-190 wcpm

Source: Ministry of Education of the State of Eritrea, 2005:35-36. *Words correct per minute

Table 20: Standards for reading accuracy and comprehension

Source:	Betts[46]		Barr, Blachowicz, Katz, and Kaufman[47]		Health Science Center of UTH[48]
Reading level	Accuracy*	Comprehension**	Accuracy	Comprehension	Accuracy
Independent: functioning adequately without a teacher's help	99%	90% or greater	98-100%	90-100%	95-100%
Instructional: function adequately with guidance yet still being challenged to improve	95%	75-89%	95-97%	75-89%	90-94%
Doubtful / Borderline: Functioning with difficulty, struggling to sound out words, and having difficulty with comprehension	91-95%	51-88%	90-94%	50-74%	
Frustration: Not functioning adequately and often showing signs of tension and discomfort	90% or less	Less than 50%	Below 90%	Below 50%	0-89%

Source: Ministry of Education of the State of Eritrea, 2005:36-37.
*Words decoded without error; ** Questions answered without error

[46] The Eritrea team cited the information from Betts, Emmet A. 1946. Foundations of reading instruction. New York: American Book Co. pp.449-453.

[47] The Eritrea survey team cited the information from Barr, R., C. Blachowicz, C. Katz, and B. Kaufman. 2002. Reading diagnosis for teachers: An instructional approach. 4th edition. Boston, MA: Allyn and Bacon. pp.253.

[48] This information was cited by the Eritrea team from Health Science Center Staff. 2002. Reading standards-Division of Developmental Pediatrics, Health Science Center, University of Texas at Houston.

Table 21: Conventional reading standards for Grade 1, 3, and 5

	The "at risk" standards			The "on grade level" standards		
	Rate	Accuracy	Comprehension	Rate	Accuracy	Comprehension
Grade 1	30 wcpm	90%	50%	50 wcpm	94%	75%
Grade 3	50 wcpm	92%	50%	80 wcpm	94%	75%
Grade 5	80 wcpm	92%	60%	100 wcpm	94%	75%

Source: Ministry of Education of the State of Eritrea, 2005:13, 15.

Table 22: The Eritrea reading standards

	The "at risk" standards			The " on grade level" standards		
	Rate	Accuracy	Comprehension	Rate	Accuracy	Comprehension
Grade 1	30 wcpm	90%	50%	50 wcpm	94 %	75%
Grade3	55 wcpm	92%	50%	80 wcpm	94%	75%
Grade5	80 wcpm	92%	60%	100 wcpm	94%	75%

Source: Ministry of Education of the State of Eritrea, 2005:46.

In terms of standards for reading fluency, Davis (2004:57) introduces the following four-point scale established by Zutell and Rasinski:

1) Clearly labored and disfluent (slow, word-by-word, pause, sound-outs, repetitions, lack of expression)
2) Slow and choppy (60-80 wcpm), two and three word phrases, many pauses, sound-outs, repetitions
3) Poor phrasing and intonation but reasonable pace; fewer sound-outs, repetitions, etc.
4) Fairly fluent – good pace (more than 110 wcpm), longer phrases, good sense of expression and intonation.

Davis (2004:125) also suggested the following minimum skill levels for the Machiguenga readers which could be used as criteria for success:

Table 23: Minimum skill levels for the Machiguenga readers

Skill level	Level Description	Rate	Accuracy	Fluency	Comprehension
Basic or Functional	Able to read text material familiar in daily experience and language genre which employs (potentially) all of the syllables of the language	80 spm*	92%	Score 2 among 1) Struggling, syllable-by-syllable 2) Reading word-by-word 3) Reading phrase-by-phrase 4) Observance of punctuation 5) Natural, communicative expression	Score 3 among 1) No demonstrated recall 2) Poor – fragments of the passage, but not the main topic 3) Fair – identified the topic and evidenced literal understanding of the most important facts 4) Good – identified the topic and elaborated on some facts, but did not cover all the supporting ideas contained in the passage 5) Excellent – identified the topic and also reported most of the supporting information given in the passage
Intermediate	Able to read with comprehension material unrestricted as to vocabulary and syllable patterning but moderately sophisticated in language genre and partially unknown in content			Score 2 among 1) Struggling, syllable-by-syllable 2) Reading word-by-word 3) Reading phrase-by-phrase 4) Observance of punctuation 5) Natural, communicative expression	
Advanced or Full	Able to read unrestricted texts of formal genre which contain new information and abstract concepts				

*Syllables per minute

The educational settings for the Eastern Tamang adult learners are very different from that of adult learners in developed countries where there are well established educational settings using mother tongues as mediums of instruction. The Eastern Tamang adults have limited teaching and learning materials, few reading materials both at literacy class and at home, minimally trained teachers, poor facilities and utilities in rural areas, etc. Therefore, I assume the performance of the Eastern Tamang adults will be substantially lower than that of adult learners in developed countries. Considering the

similarly poor educational settings, I prefer to refer to the Eritrea reading standards and the Machiguenga reading criteria to create the tentative reading standards for the Eastern Tamang adult readers. I hypothesize the Eastern Tamang adult learners who have graduated from the basic course will reach the following minimum skill levels:

1) oral reading rate – 30~60 wcpm
2) oral reading accuracy – 90~92%
3) oral reading fluency – score 2 according to the five-point scale of Davis
4) oral and silent reading comprehension – 51~60%.

The comprehensive standards for literacy skills of the Eastern Tamang adult learners will be presented in the following section according to the appropriate literacy skill levels determined for them.

3.4.2 Descriptions of literacy skill levels for Eastern Tamang adult learners

The National Research Council (2005:50-51) describes the importance of performance levels and their descriptions in the development process of an assessment instrument as follows:

> "When the objective of a test is to report results using performance levels, the number of levels and the descriptions of the levels are usually articulated early in the test development process and serve as the foundation for the test development. The process of determining the number of levels and their descriptions usually involves consideration of the content and skills evaluated on the test as well as discussions with stakeholders about the inferences to be based on the test results and the ways the test results will be used. When the number of levels and the descriptions of the levels are laid out in advance, development efforts can focus on constructing items that measure the content and skills described by the levels. It is important to develop a sufficient number of items that measure the skills described by each of the levels. This allows for more reliable estimates of test-takers' skills and more accurate classification of individuals into the various performance levels."

Based on the BLCs model and the NAAL model, I propose the following literacy performance levels and their descriptions for the Eastern Tamang adult learners as shown in Table 24. These should be discussed and refined by the assessment committee that will be organized.

Table 24: Literacy skill levels and skill level descriptions for Eastern Tamang adults

Level	Reading skills	Writing skills	Numeracy
Non-literate (L0)	Individuals at this level may recognize a few letters and/or syllables of the Eastern Tamang alphabet at most, but do not possess the fundamental reading skills for all practical purposes.	Individuals at this level may be able to write a few letters of the Eastern Tamang alphabet and/or one's own name at most, but do not possess the fundamental writing skills for all practical purposes.	Individuals at this level may recognize a few numbers and count simple quantities at most, but do not possess fundamental knowledge of written digits and calculation skills.
Below Basic/ Prerequisite (L1)	Individuals at this level may independently be able to recognize and read letters, syllables, and common sight words, phrases, and short texts with sound-outs. They may sometimes be able to locate information in short texts or simple documents when the information is easily identifiable.	Individuals at this level would be able to sign their name in the right place on a form, copy a few common sight words frequently used in their daily life, and write letters and syllables of the ET alphabet, numbers, and common words that appear in their written form in functional contexts. They may sometimes be able to enter basic personal information on simple forms.	Individuals at this level may be able to engage in some mental calculations using indigenous number systems or measurement devices/techniques only. They may be able to perform very simple arithmetic operations in commonly used formats or in simple problems when the mathematical information is very concrete. However they recognize few formal numeracy symbols and systems.
Basic/ Functional (L2)	Individuals at this level are able to read and understand simple words, phrases, and brief, continuous texts with sentences and paragraphs of some length. They are able to locate or apply information in simple but authentic prose texts or documents. They can follow directions in short, commonplace texts (e.g.,	Individuals at this level are able to write simple words, phrases, and sentences and copy information in short, commonplace texts. They also can write a brief message to a literate person and a brief description or story of an event or image. They can	Individuals at this level are able to locate and use easily identified numeric information in simple prose texts or documents. They can solve simple one-step oral and word problems when the arithmetic operation is specified or easily inferred, the mathematical information is

Level	Reading skills	Writing skills	Numeracy
	simple newspaper articles, advertisements, short stories, government forms) and may be able to work with more complex texts to complete a literal match of information in the question and text.	fill out a simple form and make a list of items from a familiar category. They would be able to make a judgment of interpretability of a composed text.	familiar and relatively easy to manipulate, and mathematical relationships are primarily additive.
Intermediate (L3)	Individuals at this level are able to read and understand moderately dense and less commonplace texts which may contain a higher level vocabulary, longer sentences, long paragraphs, and more complex sentence structure. They would be able to summarize, make simple inferences, determine cause and effect, and recognize the author's purpose.	Individuals at this level are able to write a summary of a prose text which is moderately dense and less familiar. They are able to generate written responses in the form of words, phrases, lists, sentences, and short paragraphs to demonstrate their skills.	Individuals at this level are able to locate and use numeric information embedded in prose texts or in complex documents to solve problems. They can infer the arithmetic operation or mathematical relationship when it is not specified. They are able to use fractions, decimals, or percents and to apply concepts of area, perimeter, and/or volume in real-life contexts.
Advanced (L4)	Individuals at this level are able to read lengthy, complex, abstract texts that are less familiar and may include figurative language and/or unfamiliar vocabulary. They can synthesize information and make complex inferences. They can integrate multiple pieces of information located in complex documents. They can analyze, evaluate, and synthesize information from multiple sources.	Individuals at this level are able to generate written responses that demonstrate their evaluation, analysis, and synthesis skills in reading. They can carry out more complex and /or creative writing tasks. They are able to write down whatever they say orally and can write what a literate person says to them at normal conversational speed.	Individuals at this level are able to locate and use quantitative information in complex texts and displays. They are able to solve problems that involve multiple steps and multiple comparisons of displays when the operation(s) is/are not specified or easily inferred, the mathematical relationships are more complex, and the mathematical information is more abstract and requires more complex manipulations. They are able to use measuring devices.

According to the skill levels described above, I posit comprehensive standards for literacy skills, as presented in Table 25, that will be used to classify the literacy

performance of the Eastern Tamang adult learners, especially the graduates from the Eastern Tamang adult literacy program.

Table 25: Comprehensive standards for literacy skills of Eastern Tamang adults

Skill / Level	Reading skills				Writing skills (%)	Numeracy (%)
	Rate (wcpm*)	Accuracy (%)	Comprehension (%)	Fluency (score**)		
Non-literate (L0)	Less than 10	Below 50	Below 40		Below 30	Below 30
Below Basic (L1)	10-29	51-89	40-50	1	30-49	30-49
Basic (L2)	30-60	90-92	51-60	2	50-69	50-69
Intermediate (L3)	61-80	93-95	61-70	3 & 4	70-89	70-89
Advanced (L4)	Over 80	Over 95	71-80	4 & 5	90 or above	90 or above

*wcpm : words read correctly in one minute.
**Score: the five-point scale of fluency set by Davis.

4 CONTENT OF THE INSTRUMENT

The assessment scheme for each literacy skill is based on the matrix which defines five skill levels: non-literate, below basic or prerequisite, basic or functional, intermediate, and advanced. Each matrix will be presented in the tables below in the following sections. Once test item pools for different literacy skill levels are developed, all the test items to define different skill levels should be selected from these item pools and put together into one test set consistent with the cost and time needed to implement the test in the context of Nepal, especially in the rural areas.

There are three main parts of the assessment instrument scheme: a brief entry point diagnostic test, oral test, and written test. The brief diagnostic test is designed for the assessor to quickly estimate the approximate performance level of the test taker and to assign the appropriate level instrument to the person. The test takers classified into the Non-literate (L0) and the Below Basic (L1) levels at the diagnostic test will be given oral test items for the corresponding levels. Those classified as higher levels such as the Basic level and above (L2-L4) will be given oral and written test items for higher levels according to their diagnosed levels. This diagnostic test should allow administering the other parts of the assessment in reasonable time for the sake of test takers.

The oral part tests for precursor literacy skills which are essential to becoming skillful readers. The written part assumes that test takers have mastered the precursor

skills and the rudimentary skills of reading, writing, and computing. Thus, the written portion tests their ability to read and understand silently, to identify and locate useful information from texts at different levels of difficulty, and to receive dictation or write the required information, and to carry out basic arithmetic operations. Each section of the oral test will include a few practice items. Most test items use a multiple choice format with some using a short-answer format to reduce ambiguity in scoring. All responses will be coded as either correct (1) or incorrect (0) for data entry and statistical analysis. An estimate is given of the time needed to complete each test section.

4.1 Entry point diagnostic test

> "The notion of an entry point is based on the two-fold assumption: 1) that an assessor is able to quickly guess the approximate level of the test taker just based on a quick casual conversation and 2) that if a person is able to function or perform at a given level, he or she has a high or pretty high mastery of everything which precedes the entry point" (from a personal consultation with Dr. Stephen L. Walter).

This diagnostic test will be given in the form of a simple passage right after a brief interview of the test taker's background information by the assessor. The assessor will ask the test taker to read the text as presented in the box below.

Maya is a young woman living in Kavre Palanchok district. She is now twenty-one years old. She is married to Dorje who is one year older than her. She has three children. The eldest is a four year old boy, the second a two year old boy, and the youngest a five month old girl. She loves her family so much. [Total number of words: 62]

The allocated time for this test is one minute. However, the assessor can stop the reading before the time is up if the test taker cannot read the first five words in the first sentence correctly. While the test taker reads the passage, the assessor should make an instant decision on the approximate performance level of the test taker based on the following observations:

1) If the test taker is unable to even attempt the task, struggles a lot from the first sentence, reads syllable by syllable with many errors, and cannot read through the first two sentences correctly, he of she can be considered as the Non-literate (L0).
2) If the test taker slowly reads the first two sentences with many errors, pauses, and self-corrections, he or she can be classified at the Below Basic level (L1).
3) If the test taker can read the whole text phrase by phrase or sentence by sentence with frequent self-corrections and a few pauses and sound-outs, he or she can be classified as Basic level (L2).
4) If the test taker can read the whole passage at a reasonable pace with fewer errors and self-corrections, he or she can be considered as Intermediate level (L3).
5) If the test taker can quickly read through the whole passage at good pace with good expression and/or intonation and few self-corrections (if any errors), he or she can be classified as Advanced level (L4).

The test takers classified into groups of L0 and L1 will be given only some sections of the oral test corresponding to their levels, but there will be no written test for them. Those classified into groups L2, L3, and L4 will be given some sections of the oral test and designated part of the written test corresponding to their levels. Different sets of test components to assess the test takers at different levels are as presented in Table 26 (see test items only for different levels in Appendix F).

Table 26: Test component sets for different levels

Non-literate (L0)	Below Basic (L1)	Basic (L2)	Intermediate (L3)	Advanced (L4)
Precursor skills Oral numeracy – except applied numeracy	Precursor skills Oral numeracy Oral reading – except passage reading	Oral numeracy Oral reading Written test for L2	Oral passage reading Written test for L3	Oral passage reading Written test for L4

4.2 Oral test

For the oral test items, I adopted the model of the Early Grade Reading Assessment (RTI International, 2009), the BLC (Wagner et al., 1999), and the Early Grade Mathematics Assessment (Reubens et al., 2009). The oral test will be conducted in a one-on-one (the assessor and the test taker) setting. The oral test aims to assess whether Eastern Tamang adult learners have mastered rudimentary literacy skills and gained sufficient automaticity to read at or above the Basic level. The oral test includes various test items devised to assess the following test components: book and print awareness, understanding and interpreting illustrations, oral counting fluency, oral number identification, and applied numeracy (e.g., telling time, reading money, reading calendar), letter/syllable/word/number recognition or decoding, oral reading accuracy and fluency, and oral reading comprehension. The oral test consists of a total of 121 items and will take between 6 and 25 minutes depending on the levels, as summarized in Table 27.

Table 27: Summary of oral test items

Literacy skill	Test component	Number of items	Time (minutes)	Target level
Precursor skills	P-a: Book & print awareness	5	2	L0 L1
	P-b: Illustration interpretation	3	2	
	P-c: Discerning shapes	3	2	
	P-d: Alphabet knowledge	10	2	
	P-e: Phonological awareness	17	3	

Oral Numeracy	No-a: Oral counting fluency	20	1	L0	L1
	No-b: Number identification	15	2		L2
	No-c: Applied numeracy	17	5	L1, L2	
Oral Reading	Ro-a: Word recognition	10	3	L1, L2	
	Ro-b: Accuracy – words	15	2		
	Ro-c: Accuracy & fluency – passage	1 passage	6	L2, L3, L4	
	Ro-d: Comprehension	5			
TOTAL: L0 – 73 items in 15 minutes; L1 – 115 items in 25 minutes; L2 – 83 items in 20 minutes; L3 & L4 – 6 items in 6 minutes					

4.2.1 Precursor literacy tasks for L0 and L1

Table 28: Matrix for precursor literacy skills

	Precursor literacy skills				
\Skill type Domain	Book & print awareness	Understanding & interpreting illustrations	Discerning shapes	Alphabet knowledge	Phonological awareness
Decontextualized print	P-a	P-b	P-c	P-d	P-e

The assessment of precursor literacy skills is based on the matrix presented above. This test for precursor skills will be given to individuals diagnosed or preclassified by the assessor(s) as non-literate or preliterate at Below Basic level. As mentioned in the descriptions of literacy skill levels for ET adult learners (Table 24), individuals at the Non-literate level are not likely to possess the precursor skills for skillful reading. Those at the Below Basic level are expected to achieve approximately 80% and above correct answers for the test items of these precursor skills to meet the following standards presented in Table 25:

1) oral reading rate: 10-29 wcpm
2) oral reading accuracy: 50-89%
3) oral reading fluency: 1
4) comprehension skill: 40-50%, and
5) numeracy/oral counting fluency: 30-49%

In the test on precursor skills, the assessor can discontinue the exercise when the test taker does not give answers correctly for more than half of the items in the first three consecutive sections – P-a through P-c.

4.2.1.1 Test of book and print awareness

These test items assess the Eastern Tamang adult learners' understanding of the basic concept of print and printed materials. To learn how to read, the Eastern Tamang adults must first recognize that "print corresponds to spoken language, carries meaning, and can be reliably deciphered" (Ministry of Education of the State of Eritrea, 2005:11). They also need to understand the structure of a book such as the title, the author, the table of contents, the main text, illustrations, and page numbers, as well as how to hold a book and turn pages. Sample items for this test component are presented in the box below.

P-a. Precursor literacy skills – Book & print awareness

[Time allocated for reading aloud and answering the questions: 2 minutes]

☼ Instructions: This is a test with no student sheet. Instead, the assessor keeps a recording sheet with test items for each test taker. The assessor shows a book to the test taker and says: "Here is a book. I would like you to answer the following questions about this book."

1. Where do you find the title of this book? Please point to it.

Scoring*:	Correct (1)		Incorrect (0)	

* The assessor marks a tick (V) in the appropriate column according to the response of the test taker. If the test taker does not respond to each question after 5 seconds, mark as incorrect and move on to the next question.

2. Where do you find the table of contents in this book?

Please find and show it to me.

Scoring:	Correct (1)		Incorrect (0)	

3. Please open to page X and show it to me.

Scoring:	Correct (1)		Incorrect(0)	

4. Please find and point to a period (or stop marker) on that page.

Scoring:	Correct (1)		Incorrect (0)	

5. Please find and point to a question mark on that page.

Scoring:	Correct(1)		Incorrect (0)	

Total number of correct answers: /5

4.2.1.2 Test of understanding and interpreting illustrations

Illustrations or pictorial images depicted in written materials are important because they stimulate interest or contain meaning to be communicated to the reader. Test items for this component assess the following abilities of Eastern Tamang adult learners: 1) the ability to perceive the literal content of a pictorial image in a book, 2) the ability to construe meaning from that image using prior knowledge and experience, and

3) the ability to interpret the reason why that image was used. Sample test items are presented in the box below.

P-b. Precursor literacy skills – Understanding and interpreting illustrations

[Time allocated for reading aloud and answering the questions: 2 minutes]

☼ Instructions: This is also a test with no student sheet. The assessor should mark responses in a recording sheet for each test taker. The assessor shows a particular page of a book, which contains a picture of a child/boy having diarrhea and says, "This is a boy. Yesterday, he ate some food that was kept uncovered and had some flies on it. He became ill after eating the food." Then, the assessor turns to the next page that contains a picture of a mother holding a child looking ill on her lap and taking a drink from a glass, and says: "Please look at this picture and answer my questions about it."

1. What do you see in the picture?

Please tell me what you see, pointing to each part of the picture as you do.

Scoring*:	Correct(1)		Incorrect (0)	

[Possible answers: a mother/woman/lady; a child /boy/son; two persons; a glass; a glass of water/something]

*The assessor marks a tick (V) in the appropriate column according to the response of the test taker. If the respondent correctly identifies the persons as described above, mark as correct. If he or she mentions only the glass or a glass of water, but fails

to say anything about both persons, then mark as incorrect. If the test taker does not respond to each question after 5 seconds, mark as incorrect and move on to the next question.

2. What is the mother/woman doing to the child/boy?

Scoring:	Correct(1)		Incorrect (0)	

[Answer: The mother/woman is having the child/boy drink water/something.]

3. What do you think is the main message of this picture?

Scoring**:	Correct(1)		Incorrect (0)	

[Possible answers: When a child has diarrhea, we need to have them drink water; about how to treat a child when he is ill; telling about health]

**When the respondent says one of the possible answers or something similar to that, mark as correct.

Total number of correct answers: /3

4.2.1.3 Test of discerning shapes

The ability to compare and classify similar and/or different shapes and objects is a fundamental skill for discriminating letters or syllables. Like other primers or pre-primers in Nepali and other languages of Nepal, the Easter Tamang Primer Book 1 includes a section designed to develop such discrimination skills prior to teaching letters/syllables and numbers. Three sample test items are presented in the box below.

P-c. Precursor literacy skills – Discerning shapes

[Time allocated for reading aloud and answering the questions: 2 minutes]

☼ Instructions: This is a test with a student sheet and some cards with different shapes drawn on them. The assessor will mark responses on a recording sheet for each test taker. The assessor says: "I will show you some sets of shapes. Please look at the shapes presented on the sheet and answer the questions."

1. Look at the set of shapes carefully and point to the shape which is different from the others.

Scoring:	Correct(1)		Incorrect (0)	

2. Look at another set of shapes carefully and point to the shape which occurs more than once.

Scoring*:	Correct(1)		Incorrect (0)	

*If the respondent points to any one of or all of four circles, the item is correct; otherwise it is incorrect.

3. Here are ten cards. Each card has one shape on it. Look at the cards carefully, and then sort them into groups of identical objects.

Scoring**:	Correct(1)		Incorrect (0)	

**Only when the respondent classifies all shapes into 4 groups with a single shape, mark as correct. Otherwise, mark as incorrect.

Total number of correct answers: /3

4.2.1.4 Test of alphabet knowledge

Letter-sound recognition and production is a significant predictor of reading development. Therefore, a test of alphabet or letter knowledge is an important measure of reading readiness. The Eastern Tamang alphabet is a phonemic one adopted from the Devanagri script of Nepali. The sound of a letter is the same as the name of the letter. Single consonants are always produced with the sound [a]. The test takers will be given a sheet with ten letters –seven consonants and three vowels – written on it and asked by the assessor to produce the sound associated with the symbol.

P-d. Precursor literacy skills – Alphabet knowledge

[Time allocated for reading aloud and answering the questions: 2 minutes]

☼ Instructions: This is a test with a student sheet. The assessor should mark responses on a recording sheet with test items for each test taker. The assessor points to a letter written on the student sheet one by one and asks the test taker to read each letter aloud. The assessor says: “I am going to point to some letters written on a sheet. You need to read each letter aloud when I point to it. For example, this (pointing to a letter, अ)

is [a]. Let's practice with two more letters. Please read this letter (pointing to a letter, न)". If the respondent answers [na] correctly, the assessor says, "Good job! This is [na]." If the respondent does not answer correctly in 5 seconds, the assessor says, "This is [na].

"Now let's try another one. Please read this (pointing to ग) aloud to me." If the respondent says [ga] correctly, the assessor says, "You did well. This is [ga]." If the respondent does not answer correctly in 5 seconds, the assessor says, "This is [ga]."

Then, the assessor says, "Do you understand what you are to do? Now, I will point to other letters on the sheet. Please read each one aloud just as we practiced together."

Practice item:	अ न ग

Test item		*Correct	Incorrect	Test item		Correct	Incorrect
1	उ			6	च		
2	ल			7	त		
3	स			8	ए		
4	इ			9	प		
5	ङ			10	क		
Discontinued:_____				Total number of correct answers:_____/10			

*Scoring: The assessor marks a tick (V) in the appropriate column under each letter according to the response of the test taker. If the test taker does not respond to each letter after 5 seconds, mark as incorrect and move on to the next letter or number.

☻ Stop point: If the respondent gives no correct answers among the first five letters, the assessor says, "Thank you. Let's move on to the next item", and checks on the space for the discontinued item. Each stop point indicates that the respondent did not master the relevant literacy skill to carry on further tasks for each test component.

4.2.1.5 Test of phonological awareness

These test items assess the ability to segment and blend phonemes into syllables and to recognize simple sight words in the Eastern Tamang language. This component is the critical element of reading automaticity and fluency. Sample test items for this test component are presented in the box below.

P-e. Precursor literacy skills – Phonological awareness

[Time allocated for reading aloud and answering the questions: 3 minutes]

☼ Instructions: This is a test with several cards and a student sheet. The assessor should mark responses in a recording sheet with test items for each test taker. The assessor says: "You know each letter has a sound and letters can be blended to make a word or a part of a word. For example, when क [ka] is blended with ी [i:] (showing each letter card), it becomes की [ki:] (showing the syllable card)."

"Now, let's practice. If न [na] is blended with े [e] (showing each letter card), what sound does it become?" If the respondent says [ne] correctly, the assessor says, "Good! It becomes [ne] (showing the syllable card of ने)." If the respondent does not say [ne] correctly, the assessor says, "It becomes [ne] (showing the syllable card of ने)."

"Let's practice another one. If स [sa] is blended with ो [o] and म [ma] (showing each letter card in order), what sound does it become?" If the respondent says [som] correctly, the assessor says, "Good job! It becomes [som] (showing the syllable card of

सोम).” If the respondent does not answer correctly, the assessor says, “It becomes [som] (showing the syllable card of सोम).”

Practic Item						Answer	
क	[ka]	ी	[i:]			की	[ki:]
न	[na]	े	[e]			ने	[ne]
स	[sa]	ो	[o]	म	[ma]	सोम	[som]

1. When ___ is blended with ____ (and ____), what sound does it become?

	Letters to be blended*						Answer		Correct	Incorrect
1	ग	[ga]	ी	[i:]			गी	[gi:]		
2	ल	[la]	े	[e]			ले	[le]		
3	च	[ʧa]	ा	[a:]			चा	[ʧa:]		
4	र	[ra]	ि	[i]			रि	[ri]		
5	भ	[bạ]	ु	[u]			भु	[b̤u]		
6	द	[da]	ो	[o]			दो	[do]		
7	ङ	[ŋa]	ा	a:	इ	[i]	ङाइ	[ŋa:i]		
8	ज	[ʤa]	ग	[ga]	ु	[u]	जगु	[ʤagu]		
9	स	[sa]	ु	[u]	न	[na]	सुन	[sun]		
10	आ	[a:]	फ	[pha]	ै	[a i]	आफै	[a:pha i]		
Discontinued: _____							Total number of correct answers: /10			

* When asking the question above, the assessor shows the test taker letter cards to be blended. If the respondent answers each syllable correctly, mark as correct. If the respondent answers incorrectly or partially correctly – either consonant or vowel, mark as incorrect. If the respondent does not answer in 5 seconds, move on to the next item.

☻ Stop point: If the respondent gives no correct answers among the first five syllables, the assessor says, “Thank you. Let’s move on to the next item”, and checks the space for the discontinued item.

The assessor says, “Now, let’s practice reading simple common words. For example, this (pointing to a word, मी ‘eye’, on a student sheet) is [mi:]. Let’s practice. Please read this word aloud to me (pointing to a word, रा ‘goat’, written on the sheet).” If the respondents say [ra:] correctly, the assessor says, “Good job! This is [ra:].” If the respondent does not answer correctly in 5 seconds, the assessor says, “This is [ra:].”

“Let’s practice reading another word. Please read this word aloud to me (pointing to a word, ताम ‘language/speech’, written on the sheet).” If the respondent says the word correctly, the assessor says, “Good! This is [ta:m].”

“Now, I will point to several words written on the sheet. Please read each word aloud to me as we practice together.”

2. Read words.

Practice items: मी रा ताम

	Test item		*Correct	Incorrect
11	नागा	‘chicken’		
12	सिङ	‘firewood’		
13	आले	‘younger brother’		
14	मोजे	‘banana’		
15	कराइ	‘a deep, round pan’		
16	चजा	‘salt’		
17	टाङगा	‘money’		
Discontinued: ___		Total number of correct answers: /7		

* The assessor marks a tick (V) in the appropriate column according to the response of the test taker. If the test taker does not respond to each word after 5 seconds, mark as incorrect and move on to the next word.

☻ Stop point: If the respondent gives no correct answers among the first three words, the assessor says, “Thank you. Let’s move on to the next item”, and checks the space for the discontinued item.

Total number of correct answers: /17

4.2.2 Oral numeracy for L0 - L2

Table 29: Matrix for oral numeracy

/Skill type Domain	Oral numeracy		
	Oral counting fluency	Number identification	Applied numeracy
Decontextualized print	No-a	No-b	No-c

The test components of oral numeracy include oral counting fluency, number identification, and applications such as telling time, reading money, and reading a calendar. The full set of oral numeracy test items will be given to the test takers preclassified as Below Basic (L1) and Basic (L2) levels, and test items for oral counting fluency and number identification only to individuals diagnosed as Non-literate (L0). Individuals at Non-literate level are not likely to possess these kinds of fundamental numeracy skills. However, those at Below Basic level are expected to perform at the 50-80 % level and those at Basic level are expected to perform at or above 90%.

4.2.2.1 Test of oral counting fluency

Tamang number names of 1 through 20 are used in a consistent way by any Tamang speaker, but the names of 21 through higher numbers are not consistent and there are a few different ways to count 21 and above. In addition, some Tamangs use only

Nepali numbers which are very irregular, or mixed numbers of Nepali and Tamang. This test component assesses the Eastern Tamang adult learners' knowledge of Tamang number names and ability to produce numbers accurately and fluently. The test takers will be asked to count from the number 5 through 25 without making a counting error. However, the number of consecutive numbers for oral counting may be modified after consultation with local teachers in the literacy program. The task is described in the box below.

N_o-a. Oral numeracy – oral counting fluency

[Time allocated for reading aloud and answering the questions: 1 minute]

☼ Instructions: This is a test without a student sheet. When the test taker counts numbers, the assessor marks his/her responses in a recording sheet with test items for each test taker. The assessor says, "Now, I'd like you to count numbers in sequence. For example, one, two, three, four, five, and so on. Please count out loud from 5 to 25. Are you ready? Begin!"

When the respondent finishes oral counting in 30 seconds, the assessor records the last number the respondent says correctly.

☻ Stop point: If the respondent makes more than one error in sequence without self-correction, the assessor stops the watch and says, "Thank you. Let's move on to the next item", and checks the space for the discontinued item.

Last number said correctly	

4.2.2.2 Test of number identification

This component tests the ability of Eastern Tamang adult learners to orally identify printed number symbols. This test items measures how fast and accurately the learners can name the numbers randomly selected between one and one hundred. Sample items are presented in the box below.

N_o-b. Oral numeracy – Number identification

[Time allocated for reading aloud and answering the questions: 2 minutes]

☼ Instructions: This is a test with a student sheet. When the test taker says the names of the numbers on the student sheet, the assessor marks his/her responses in a recording sheet with test items for each test taker. The assessor says, "Here are some numbers. Please point to each number with your finger and say to me what the number is. Please move your finger from top to bottom of each column. Please start here (pointing to the first number)."

Test items:

Item#	Number		Item#	Number	
1	५	'five'	9	३९	'thirty nine'
2	८	eight'	10	५६	'fifty-six'
3	६	' 'six'	11	७५	'seventy-five'
4	१५	'fifteen'	12	६७	'sixty-seven'
5	१	'one'	13	८४	'eighty-four'
6	३०	'thirty'	14	९१	'ninety-one'
7	२२	'twenty-two'	15	१००	'one hundred'
8	४३	'forty-three'			

Scoring*:	Total number of correct reading	/15

* The assessor follows the respondent's reading along with a pencil and marks clearly any incorrect numbers with a slash (/). If the respondent self-corrects on any number, the assessor should count it as correct. If a number is already marked as incorrect with a slash, the assessor should circle the number and go on. If the respondent hesitates for 3 seconds, the assessor will say, "Please skip this one and keep going on." The assessor marks the skipped number as incorrect.

☻ Stop point: If the respondent gives no correct answers among the first five numbers, the assessor says, "Thank you. Let's move on to the next item", and checks on the space for the discontinued item.

4.2.2.3 Test of applied numeracy

This component targets the ability of Eastern Tamang adult learners to apply numerically-based measuring systems in their culture. Test items measures their ability to 1) tell time from a watch or a clock, 2) read the value of money (coins and notes), and 3) get information from a calendar. This section of the oral numeracy test will be given to individuals at Below Basic (L1) and Basic (L2) levels only. If the test taker is stopped by the assessor in the first two consecutive subsections of this test, this section will be skipped. Sample items are presented in the box below.

N_o-c. Oral numeracy – Applied numeracy

[Time allocated for reading aloud and answering the questions: 5 minutes]

☼ Instructions: This is a test without a student sheet. When the test taker gives answers, the assessor marks his/her responses in a recording sheet with test items for each test taker. The assessor says, "Now, I am going to ask you several questions using some objects that you use often in real life. First of all, here is a watch. Please look at the watch and tell me what time it is now." If the respondent tells the time correctly, the assessor says, "Good job! Let's try another one", putting the hands of the watch forward or backward. If the respondent is hesitant or does not give any answer in 5 seconds, the assessor says, "It is ___. Let's try another one." Three practice items telling time are given in this way.

1. What time is it now?

Item #	Time	Answer	*Correct	Incorrect
1	8:00	'Eight o'clock'		
2	3:10	'Three-ten'; 'ten past three o'clock'		
3	12:15	'a quarter after twelve'; 'twelve- fifteen'		
4	5:30	'Half past five'; 'five-thirty'		
5	9:45	'a quarter to ten'; 'nine-forty-five'		
Discontinued: _____		Total number of correct answers: _____		

*The assessor marks a tick (V) in the column of either correct or incorrect for each test item. If the respondent is hesitant or does not give an answer for each item in 5 seconds, the assessor says, "Thank you. Let's go on the next item." The assessor marks the skipped item as incorrect.

☻ Stop point: If the respondent gives no correct answers among the first two items, the assessor says, "Thank you. Let's move on to the next item", and checks the space for the discontinued item

"Here are different kinds of money that you use often in the market. I will show either a coin or a note one by one, Then, please tell me the value of each one."

2. How much is it worth?

Item #	Money	Answer	Correct	Incorrect
6	A coin of 1 rupee	'one rupee'		
7	A coin of 10 rupees	'ten rupees'		
8	A note of 20 rupees	'twenty rupees'		
9	A note of 5 rupees	'five rupees'		
10	A note of 50 rupees	'fifty rupees'		
11	A note of 1 rupee	'one rupee'		
12	A note of 100 rupees	'one hundred rupees'		
Discontinued: _____		Total number of correct answers: _____		

☻ Stop point: If the respondent gives no correct answers among the first three items, the assessor says, "Thank you. Let's move on to the next item", and checks the space for the discontinued item.

"Now, I will show you the Tamang calendar of the year 2011(2067-68 BS). When I point to a date from the calendar, please read aloud the date (the month and the day). For example, this (pointing to the Tamang date in the same section of January 7th) is पुस २३ गते [pus ba:is gate]. For another example, this (pointing to the Tamang date in the same section of February 10th) is माघ २७ गते [ma:gʰ sata:is gate]. Now, please look at the date I point to and answer my questions."

3. What date is it?

Item #	Date (mm/dd)[49] pointed*		Correct	Incorrect
13	चैत १६ गते	(March 30th)		
14	असोज २५ गते	(October 12th)		
15	साउन ३२ गते	(August 17th)		

* The assessor should point to the Tamang date, not the western date.

4. What day is it?

(The assessor should have the respondent look for the date and answer.)

Item #	Test item	Answer	Correct	Incorrect
16	What day is पुस १७ गते (Jan. 1st)?	शनिबार 'Friday'		
17	What day is माघ ३ गते (Jan.17th)?	सोमबार 'Monday'		

Total number of correct answers: /17

4.2.3 Oral reading skills for L1-L4

Table 30: Matrix for oral reading skills

	Oral reading skills		
Domain / Skill type	Word recognition	Accuracy & Fluency	Comprehension
Decontextualized print	R_o-a	R_o-b	·
Prose text	·	R_o-c	R_o-d

The assessment of oral reading skills is based on the matrix presented above. The full set of oral reading test will be given to the test takers preclassified as the literate at Basic level (L2). Only word recognition and word reading sections of this test will be

[49] A calendar of Nepal usually includes two systems: the western calendar system and the traditional calendar system of Nepal or an indigenous ethnic group. The dates pointed to in the calendar are not western dates but Tamang dates which are written in Devanagari script in the same boxes/sections.

given to individuals at Below Basic level (L1), and the section of oral passage reading and comprehension to individuals at Intermediate (L3) and Advanced (L4) levels. Individuals at or above Basic level are expected to be able to read and understand simple words, phrases, and brief, continuous texts with sentences and full paragraphs. To do so, they need decoding (word recognition and accuracy and fluency) and comprehension skills. To be functional readers in their community, Eastern Tamang adult learners need to meet the following standards for oral reading skills:

1) oral reading rate: 30-60 wcpm for Basic level (L2); 61-80 wcpm for Intermediate (L3); over 80 wcpm for Advanced level (L4)
2) oral reading accuracy: 90-92% for L2; 93-95% for L3; over 95% for L4
3) oral reading fluency: 2 for L2; 3 for L3; 4 for L4, and
4) comprehension skill: 51-60% for L2; 61-70 for L3; 71-80% for L4.

4.2.3.1 Test of word recognition for L1 and L2

This task assesses the Eastern Tamang adults' word recognition skill using familiar words but with no context to help guess the word. These familiar words are high-frequency words from the Eastern Tamang Primers and used routinely in real life contexts. Sample items are presented in the box below.

R_o-a. Oral reading skills – Word recognition

[Time allocated for reading aloud and answering the questions: 3 minutes]

☼ Instructions: This is a test with student sheet. The assessor should mark responses in a recording sheet with test items for each test taker. The assessor says,

"Now, I will show you some pictures of things that we see often around us. You need to point to the right word for the object in the picture, which is written on the sheet. For example, the name of the object in this picture (pointing to the picture of a tree) is दोङ [doŋ] (pointing to the word written on the sheet and reading)."

"Let's practice. What is this in the picture (showing and pointing to a picture of bananas)? Please find the proper word written on the sheet." If the respondent points to मोजे on the sheet and reads it as [mod͡ze], the assessor says, "Good job! This is मोजे [mod͡ze]." If the respondent points to a wrong word, the assessor points to the right one and says, "This is मोजे [mod͡ze]."

The assessor says, "Let's practice another one. What is this in the picture (showing and pointing to a picture of a dog)?" If the respondent points to नगी on the sheet and reads it as [nagi:], the assessor says, "Good job! This is नगी [nagi:]." If the respondent points to a wrong word, the assessor points to the right one and says, "This is नगी [nagi:]."

"Now, I'll show you pictures one by one. Point to the right word written on the sheet and read it aloud to me."

1. What is this in the picture?

Practice items:	1) a picture of a tree = दोङ [doŋ]
	2) a picture of bananas = मोजे [mod͡ze]
	3) a picture of a dog = नगी [nagi:]

Test items:

	Picture of	Word		Correct	Incorrect
1	a crow	कावा	[ka:wa:]		
2	a corn	मकै	[maka ʲ]		
3	a toilet	चर्पी	[ʧaɾpi:]		
4	a bamboo basket	छाङः	[ʧʰa:ŋ]		
5	a wooden jug for yogurt	ठेगा	[ʈʰega:]		
6	the sun	धिनी	[d̪i̯ni:]		
7	water	क्युइ	[kwi]		
8	finger(s)	जुम्बी	[ʤumbi:]		
9	garlic	न्हो	[no̯]		
10	a snake	पुख्री	[pukʰri:]		
Discontinued: _____		Total number of correct answers: _____/10			

☻ Stop point: If the respondent gives no correct answers among the first three words, the assessor says, "Thank you. Let's move on to the next item", and checks the space for the discontinued item.

4.2.3.2 Test of accuracy of word reading for L1 and L2

This test component is for assessing the ability to decode individual words which are not embedded in a context. Sample test items are presented in the box below.

R_o-b. Oral reading skills – Accuracy of word reading

[Time allocated for reading aloud and answering the questions: 2 minutes]

☼ Instructions: This is a test with a student sheet. As the test taker/student reads individual words, the assessor marks his/her responses in a recording sheet for each test taker.

The assessor says, “Now, I will show you a list of some words. I would like you to look at each word carefully and read aloud as of many the words as you can. For example, this word is [dim] ‘house’ (pointing to the word, दिम).”

“Let’s practice. Please read this word (pointing to लबु ‘radish’).” If the respondent says [labu] correctly, the assessor says, “Good job! This word is [labu].” If the respondent does not say it correctly within 5 seconds, the assessor says, “This word is [labu].”

“Let’s try another word. Please read this word (pointing to चजा ‘salt’).” If the respondent says [ʧaʤa:] correctly, the assessor says, “Good job! This word is [ʧaʤa:].” If the respondent does not say it correctly within 5 seconds, the assessor says, “This word is [ʧaʤa:].”

“Now, please look at the words presented here carefully and read aloud as many words as you can.”

Practice items:	दिम ‘house’	लबु ‘radish’	चजा ‘salt’

Test items:

	Words			Words
1	कोला	‘baby’	9	‘nutritious’
2	मार	‘down’	10	‘to develop’
3	ऐना	‘mirror’	11	‘disease’
4	उमाल	‘a b lance’	12	‘landslides’
5	ग्वाई	‘hawk’	13	‘problem’
6	नाम्सा	‘village’	14	‘culture’
7	थुङ्बा	‘to smoke’	15	‘independent’
8	होच्छेलमा	‘thereafter	*Total number of correct words: /15	
Discontinued:_____				

*Scoring: As the test taker reads words, the assessor follows his or her reading along with a pencil and marks clearly any incorrect words with a slash (/). If the respondent self-corrects on any word, the assessor should count it as correct. If a word is already marked as incorrect with a slash, the assessor should circle the word and go on. If the respondent hesitates for 3 seconds, the assessor points to the next word and says, "Please skip to the next word and keep going." The assessor marks the skipped word as incorrect.

☻ Stop point: If the respondent gives no correct answers among the first five words, the assessor says, "Thank you. Let's move on to the next item", and checks the space for the discontinued item.

4.2.3.3 Test of reading accuracy, fluency, and comprehension for L2-L4

Oral passage reading requires the application of all precursor skills: translating letters into sounds, unifying sounds into words, processing connections, relating text to meaning, and making inferences to fill in missing information (RTI International, 2009:32). This test component measures 1) how quickly and accurately Easter Tamang adult learners can read a prose text and 2) how well they understand the passage. This test will be given to all the test takers preclassified by the assessor as literate at Basic (L2), Intermediate (L3), and Advanced (L4) levels. Sample items are presented in the box below.

R_o-c & R_o-d. Oral reading skills – Accuracy, fluency, and comprehension of passage reading

[Time allocated for reading aloud and answering the questions: 6 minutes]

☼ Instructions: This is a test with a student sheet but without practice items. When the test taker reads the passage on the student sheet for him/her, the assessor marks his/her responses in a recording sheet with test items for each test taker. The assessor says, "Now I'd like you to read this story. Start with the title and read out loud through the story. Please read as quickly and accurately as you can. Try to read the story naturally as if you were talking to your friend. When you are finished, I will ask you a few short questions about the story. Are you ready to start reading? Then, go!'

Nepal, My Country [3]

Laso ('Hello')! My name is Chaangbaa. I was born and live in Nepal. Nepal, my country, is a beautiful and peaceful country. [24]

In Nepal, there are many high mountains called "Himalayas". Himalayas mean "the house of snow". Every year, many foreigners come to Nepal to see those mountains with snow all year. [54]

There are lots of hills and lowlands in Nepal too. There live many different tribal peoples and they speak different languages. Nepali is the national language of my country. I speak Tamang language with my family and Tamang people. But I have to communicate with other people in Nepali. [103]

Most people in Nepal do farming. We raise corn, millet, wheat, and beans in the fields of the hill areas and rice in the lowland areas. We raise chickens, goats, and buffalos too. We can get some fish only from rivers or lakes because Nepal has no sea around it. My country is surrounded by Tibet in the north and by India in the east, west, and south. [171]

There are dry and rainy seasons in Nepal. In the dry season, we can enjoy clear skies and beautiful weather for several months. I like my country and my children also love to live in this country. Why don't you come and visit my country and my family someday? [220]

Scoring*:	Number of correct words	/220 words
	Time spent on reading	/240 seconds
	If discontinued	

*The assessor starts the stopwatch/timer when the test taker reads the first word. The assessor follows his or her reading along with a pencil and marks clearly any incorrect words with a slash (/). If the respondent self-corrects on any word, the assessor should count it as correct. If a word is already marked as incorrect with a slash, the assessor should circle the word and go on. If the respondent hesitates for 3 seconds, the assessor says, "Please skip it and keep going on." The assessor marks the skipped word as incorrect.

☻ Stop point: If the respondent cannot read most (more than 12) of the words in the first paragraph correctly or makes 50% or more errors in the first two paragraphs, the assessor says, "Thank you.That's all you need to read." The assessor marks the final

words with a bracket (]), checks in the bottom row of the Scoring box, and moves on to the next item.

If the respondent finishes reading the whole passage in four minutes or less, the assessor marks the final words with a bracket and notes the time for reading. Then the assessor removes the passage from before the respondent and asks the following comprehension questions one by one. The assessor should read aloud the questions for each line up to the bracket marked. The respondent is given 10 seconds to answer each question. The assessor marks his or her response and then move on to the next question.

The assessor says, "Now, I will ask you some questions about the story you just read. Please listen carefully and answer the questions as best as you can."

Oral comprehension question		Answer	Correct	Incorrect
1	What is the name of the person talking in the story? (for the 2nd sentence of the 1st paragraph)	Chaangbaa		
2	What does Himalayas mean? (for the 2nd sentence of the 2nd paragraph)	The house of snow		
3	What language does Chaangbaa speak with his family? (for the 4th sentence of the 3rd paragraph)	Tamang (language)		
4	What is it that Nepal does not have according to Chaangbaa's geographical description of Nepal? (for the 4th sentence of the 4th paragraph)	The sea		
5	How do you know whether Chaangbaa is a child or an adult? (for the 3rd sentence of the 5th paragraph)	He is an adult because he has his own children.		

Total number of correct answers: /5

4.3 Written test

To devise written test items for the proposed skill levels, I adapted the methodologies from the BLC, the EGRA, and the EGMA models. The written test will be conducted in a classroom setting with an assessor and a group of test takers who are of the same level. Since the written test will be given to individuals diagnosed as literate at the Basic, the Intermediate, and the Advanced levels, three assessors will administer the test in three different rooms with three different groups. There will be three separate test booklets for these three levels. That is, contents from test components labeled for these levels in chapter 4 will be put into different test booklets. For example, every test item labeled for L2 will go into the test booklet for L2.

The written test includes various test items designed to assess the following skills: word recognition, comprehension, critical reading skills, number recognition and basic computing skills, applied numeracy, and writing skill such as dictation. Different test items of the written test are designed to assess individuals at three different levels – Basic (L2), Intermediate (L3), and Advanced (L4). Test takers at each preclassified level are expected to meet the following standards for three different literacy skills:

1) Silent reading – word recognition: 90% and above for Basic level (L2)
2) Silent reading – comprehension: 80% and above for each L2, L3, and L4
3) Numeracy: 50-69% for L2; 70-89% for L3; over 90% for L4
4) Writing skill: 50-69% for L2; 70-89% for L3; over 90% for L4.

The written test consists of a total of 42-46 items and will take approximately 35 to 40 minutes to complete.

Table 31: Summary of written test

Literacy skill	Test component		Number of items	Time (minutes)	Target level
Silent Reading	R_w-a	Word recognition – decontextualized	4	2	L2
	R_w-b	Comprehension – prose	3	5	
	R_w-d	Comprehension– document	3	5	
	R_w-b R_w-c	Comprehension & Critical thinking - prose	3	5	L3
	R_w-d	Comprehension – document	3	5	
	R_w-b & R_w-c	Comprehension & Critical thinking - prose	3	8	L4
	R_w-d	Comprehension – document	3	7	
Numeracy	N_w-a	Quantity discrimination – decontextualized	3	1	L2-L4
	N_w-b	Quantity discrimination – prose	1		
	N_w-c	Identifying missing numbers	3	1	
	N_w-d	Measuring skills in applied numeracy	8	5	
	N_w-e	Computing skills - decontextualized	8	4	
	N_w-f	Computing skills – prose	3	4	
	N_w-g	Computing skills – document	3	4	
Writing	W-a	Dictation	7	5	
TOTAL: L2 – 46 items in 36 minutes; L3 – 42 items in 34 minutes; L4 – 42 items in 39 minutes					

Before the written test, the assessor distributes a test booklet for each level to each test taker at the corresponding level. Then, the assessor says, "During the written test, I will not give any oral instructions. All instructions or questions are written in the student sheet. So, please read the instruction for each test item carefully. Then, look at the examples and make a circle on the right answer for each test item. When you don't understand the instruction well, raise your hand so that I can help you understand the instruction better. The time allocated for this written test is 40 minutes." The assessor should response to questions for clarification only, not providing any direct or indirect clues for answers of each test item.

4.3.1 Silent reading skills for the Basic level and above

Table 32: Matrix for Silent reading skills

	Silent reading skills		
\Skill type Domain	Word recognition	Comprehension	Critical thinking
Decontextualized print	R_w-a	·	·
Prose text	·	R_w -b	R_w -c
Document text	·	R_w-d	·

For skillful readers at the Basic level and above, automaticity in word reading is essential and that automaticity should be accompanied by immediate comprehension skills. The three test components mentioned above will measure the reading skills of Eastern Tamang adult learners at various levels. Descriptions of various test items of reading skills for different levels are presented in the following sub-sections.

4.3.1.1 Test of word recognition for L2

This task measures decoding skills in decontextualized print of Eastern Tamang adult learners. Sample items are presented in the box below.

Rw-a. Word recognition in decontextualized print for L2

[Time allocated for reading aloud and answering the questions: 2 minutes]

☺ When the letters in the brackets ([ ]) are combined in that order, what word is made? Please circle the right word.

1. [थ] + [◌ा] + [ब] + [◌ा] = ?

① थवा ② थावा ③ याबा ④ थाबा [Answer: ④]

2. [प] + [र] + [ि] + [व] + [ा] + [र] = ?

① परवर ② परिबर ③ परिवार ④ प्रविर [Answer: ③]

☺ Please look at the pictures below. Find and circle the word which is the name of the object pictured.

3.

① झाङ ② दोङ ③ छाङ ④ काङ [Answer:②]

4.

① sun ② flag ③ moon ④ mountain [Answer:②]

Total number of correct answers: /4

4.3.1.2 Test of comprehension skills in prose text for L2

These test items assess Eastern Tamang adult learners' decoding skills and the ability to identify and locate information in a short prose text. Sample items are presented in the box below.

R_w-b. Comprehension in prose text for L2

[Time allocated for reading the text and answering the questions: 5 minutes]

☺ Please read the following story in the box silently. When you have finished

reading the story, read and answer the questions. Please circle the best answer to each question.

A Heavy Rain

In a small village of Kavre District in Nepal, there lived a boy named Man Bahadur Lama. In the summer that he became nine years old, there came a heavy rain one day. It destroyed many things. His house was damaged seriously and his family's fields were lost by landslides. Mud and rocks filled the fields and roads around his village.

However, villagers came to work together to restore the damaged fields and roads. They also helped Man's family rebuild their house and cultivate the damaged fields. Whenever it rains heavily, Man remembers the generous help of villagers as well as the pain of the loss at that time.

[Total number of words: 112]

1. Who is this story about? [Answer: ③]

① Chaangba Lama ② Bam Bahadur Lama
③ Man Bahadur Lama ④ Madan Lama

2. What is the major event this story tells us about? [Answer:②]

① an earthquake ② a heavy rain
③ a big fire ④ a severe drought

3. What did the family do after they lost their house and fields? [Answer:④]

①They moved out of the village and settled in Kathmandu.
② They bought a new house and new fields in the village.
③They had to work for other rich neighbors in another village.
④ They restored their house and fields again with the help of villagers.

Total number of correct answers: /3

4.3.1.3 Test of comprehension skills in a document for L2

This task assesses Eastern Tamang adult learners' ability to understand and locate or apply specific information in a document. The test items for this component measure how well the reader understands the content of a simple but authentic document and can locate information in the document. Sample items and instructions are presented in the box below.

R_w-d. Comprehension skills in a document for L2

[Time allocated for reading the text and answering the questions: 5 minutes]

☺ Please look at the information from a brochure below. Then, read the questions carefully and answer them. Circle the best answer to each question.

How to Raise Potatoes[50]

Tools and Supplies:

Hoe, rake, spading fork, knife, seed potato, fertilizer, water, tray

Steps to follow:

1. Preparing the soil
   - Clearing the land
   - Loosening the soil
   - Digging the holes (3-5 inches deep) [36]

2. Preparing the potatoes
   - Cutting into pieces with at least one eye on each planting portion
   - Sprouting the eyes, laying the pieces on flat trays in a sunny, airy place for several weeks

3. Planting the potatoes
   - Inserting a small segment of the sprouted seed potato in previously dug holes apart 12 inches [90]
   - Covering the potatoes with sufficient loose soil
   - Giving the potatoes a boost with water and fertilizer

4. Maintaining the plants
   - Weeding the plants
   - Fertilizing the plants
   - Controlling insects
   - Watering when necessary

5. Harvesting the potatoes
- Determining correct time of harvest (when the vines completely died down; dig and check the size of potatoes)
- Removing potatoes from the ground
- Storing the potatoes for extended use in a cool, dark place with plenty of air [161]

✶**Warning**: Potatoes that have been dug up should not be exposed to the sun any longer than is necessary to remove dirt. [179]

[Total number of words: 179]

1. What is the brochure about? [Answer:①]

① How to raise potatoes ② How to raise sweet potatoes

③ How to raise radishes ④ How to raise carrots

2. To sprout the eyes of potato, where do you need to place the pieces?

① in a cool, dark place ② in a cold, windy place

③ in a sunny, airy place ④ in a dry, dark place [Answer:③]

[50] This information is adopted and summarized from the text, "How to raise potatoes in home garden", which is retrieved [April 7, 2011] from the following website: http://www.io.com/~hcexres/textbook/instrxx4c.html.

3. To plant the potatoes, how deeply do you need to dig the holes?

① 4 inches ② 6 inches ③ 9 inches ④ 12 inches [Answer:①]

Total number of correct answers: /3

4.3.1.4 Test of comprehension and critical thinking skills in prose text for L3

The test component of critical thinking tests the ability of Eastern Tamang adult learners to analyze and synthesize a prose text. Test items for this component assess their ability to understand, analyze, and summarize the content of a newspaper article. Sample items are presented below.

R_w-b & R_w-c. Comprehension and critical thinking in a prose text for L3

[Time allocated for reading the text and answering the questions: 5 minutes]

☺ Please read the following article in the box silently. When you have finished reading the story, read the questions and answer them. Please circle the best answer to each question.

Mothers' bid for model village[51]

HIMALAYAN NEWS SERVICE Added At: 2011-04-06 11:32 PM

DIKTEL: It seems that women of Martim Village Development

[51] This news article is excerpted from the Himalayan Times which is retrieved [April 6, 2011] from http://www.thehimalayantimes.com/fullNews.php?headline=Mothers%26acute%3B+bid+for+model++village&NewsID=282964.

Committee, Khotang are all braced to make their village a model village. After realizing the need for drastic overhaul in their way of life, the women here formed Sayapatri Mothers' Group two years ago. [59]

In the first phase, they launched a toilet construction campaign. According to Chandrakala Dhakal, chairperson of the group, the toilets are being built with funds from locals. [86]

"As the villagers are frequently afflicted by diarrhoea and in need of toilets in their houses, we chose this as our first move," she said. [111]

The group has also declared the village an alcohol and gambling-free zone. The group has also added four beds at the local sub-health post. It also initiated production of incense sticks to generate income. [147]

At the beginning of every month, the group holds discussions on sanitation and different issues of the village and on the basis of this, they make plans. [174]

According to Shiva Dhakal, a local, the group's campaigns have successfully effected huge changes in the village. "Now people trust them more than us (men)," he said. [201]

[Total number of words: 201]

1. What is this article about? [Answer: ②]

① A feminist movement ② A community development initiative

③ A health campaign ④ An income generation program

2. Which of the following is NOT one of the issues of Martim village? [Answer:③]

① Sanitation ② Drinking alcohol ③ Lack of trust of men ④ Gambling

3. Which of the following statement is NOT true in this account? [Answer:①]

① Toilets are being built with external funds.

② Villagers began to make incense sticks to sell.

③ There were a lot of positive changes in the village.

④Villagers discuss on and make plans together for various issues.

Total number of correct answers: /3

4.3.1.5 Test of comprehension skills in a document for L3

R_w-d. Comprehension of a document for L3

[Time allocated for reading the text and answering the questions: 5 minutes]

☺ Please read the document in the box below. When you finish reading it silently, answer the questions. Circle the best answer to each question.

**********Rehydration Information**********

Provided by: Sipali Community Healthcare committee
Date: February 13, 2011

REHYDRATION DRINKS[52]
If commercial rehydration drinks are unavailable the following drinks may be used: [26]

1. FOR FLUID REPLACEMENT DURING AND AFTER HIGH FEVER, DIARRHEA, AND/OR VOMITING –
• Infants – breast milk
• Infants and children under 12 years – rice cereal formula
• Children over 12 and adults – homemade oral rehydration therapy (ORT) or oral rehydration solution (ORS) [65]
1) For Rice Cereal Formula
- 6 glasses of clean water
- 1 cup cooked rice
- 1/2 level teaspoon salt
2) For Oral Rehydration Therapy (ORT)
- 6 glasses of clean water
- 1 scant teaspoon salt
- 3 and half tablespoons of sugar
- 1/3 teaspoon baking soda [104]
3) For Oral Rehydration Solution (ORS)
- 6 glasses of water
- 1 level teaspoon salt
- 8 level teaspoons sugar

[52] This information is retrieved and adopted from http://www.simplyprepared.com/rehydration%20drinks.htm. It is also edited with respect to the context of Nepal.

2. FOR FLUID REPLACEMENT DURING AND AFTER HEAVY SWEATING –
Homemade Sports Drink
- 1 cup of powdered fruit juice (sugar included)
- 3/4 teaspoon salt
- 12 glasses of clean water

★ How to BOIL, KEEP, and SERVE rehydration drinks:
1) When you boil water before mixing anything, you should boil it for 15 minutes once it starts boiling. Then, boil five more minutes after putting salt or sugar in it.
2) Cool the water and keep it in a clean container or bottle with a lid.
3) Serve the ill or weak person with the homemade rehydration drink as often as possible – at least 6 times per day. [223]

****

[Total number of words: 223]

1. Who is providing this information? [Answer: ③]

① a school ② a village clinic
③ a healthcare committee ④ a VDC[53]

2. Who does NOT need this information? [Answer: ②]

① a person who has high fever ② a person who has a cut on his foot
③ a person who has sweated a lot ④ a person who has diarrhea and vomiting

3. When a 13–year old boy has high fever and diarrhea, what is the best his mother can prepare for him? [Answer: ④]

① Clean water ② rice cereal formula
③ boiled milk ④ Oral rehydration solution

[53] Village development committee

Total number of correct answers: /3

4.3.1.6 Test of comprehension and critical thinking skills in a prose text for L4

The test items for these components assess the ability of individuals at an advanced level to read and understand a lengthy, complex, and abstract prose text that is less familiar and includes figurative language. The items also measure their ability to make some complex inferences from multiple sources. Sample items are presented in the box below.

R_w-b & R_w-c. Comprehension and critical thinking skills in a prose text for L4

[Time allocated for reading the text and answering the questions: 8 minutes]

☺ Please read the following story in the box silently. When you have finished reading the story, read and answer the questions. Please circle the best answer to each question.

Father's Chest[54]

Once there lived an old man with his two big sons both married. The sons were well mannered and devoted to the service of their aged father. Although the father and his two sons were peasants by profession, they owned lots of land and a nice cozy house, big enough to keep themselves quite comfortably. The old man, the head of the family was running the family affairs fairly. Everybody in the family was happy and quite relaxed. [80]

As time passed on, the old man became even older and his sons also became the fathers of several children. One day, the old man called his sons and told them, "I want you to take the family responsibilities from me and take good care of the

[54] This text is excerpted and edited from a common folktale of Nepal, "When the poor old man was retired", by Dhurba Krishna Deep (1993:79-80).

family affairs from now on." He divided all the property into two equal halves as inheritances for his two sons. His sons appreciated his decision. [152]

Now the joint family was split into two different families. The house was also duly portioned leaving only a small room for the old man to live privately as he wanted. Regarding the responsibility of taking care of the retired family chief, an agreement was signed according to which it would require his sons to look after their aged father for one full month at a time in turns. [239]

As agreed upon, he was fairly well looked after by his sons for the first few months. But very soon the old man found himself neglected and became quite lonely. His sons were no longer interested in him as they had everything they could get from him already. Life became more and more miserable for him to bear. He repented on leaving nothing for himself for his [ ] days. [307]

The situation grew so worse that his sons did not even hesitate to give their aged father the worst meal fit only for animals. He, however, accepted the meal they gave, but never ate it and preferred to stay hungry. One day, he visited his family priest who had always been a well-wisher and nice advisor to him. He explained all about his grief to him. After a little thoughtful pause, the priest uttered a few words to the old man who immediately looked very delighted with his advice. Soon the old man came back home and stored something very quickly in his little chest which he always kept in his bed room and locked very heavily. Since then, he started to guard it almost round the clock. [435]

Soon the chest became a subject of great curiosity to everyone in the family. Whenever his sons inquired about the content in the chest, he answered, "A few valuables of my last assets. I would like you to share this last treasure between you two brothers equally after my death." The two sons started dreaming of another untold treasure that they would soon inherit and also of their very bright and luxurious future. Good days came back to the old man once more. The old man enjoyed the good food and all the family hours he deserved until he finally died. [534]

After his death, his two sons hastily opened their father's chest. But to their great disappointment, they could see nothing but a few pieces of heavy rocks and other junks. At last, they realized their father's wisdom and repented for all the mistreatment of their father. [578]

[Total number of words: 578]

1. Which one is the best set of attributes for describing the old man and the two sons in this story? [Answer: ④]

① stingy – curious ② greedy - stingy ③ secretive - fearless

④ wise - greedy ⑤ sincere - generous

2. Which one is the most appropriate word to fit into the bracket of the underlined phrase? [Answer: ③]

① happy ② bright ③ rainy ④ rich ⑤ worthless

3. What is the best lesson we can learn from this story? [Answer: ③]

① We need to eat well every day.
②We need to save money before we retire.
③ We need to take care of our parents faithfully.
④ We need to find treasures for our bright future.
⑤ We need to plan well for our retirement.

Total number of correct answers: /3

4.3.1.7 Test of document comprehension for L4

This component targets the ability of individuals who may have advanced reading skills to read, understand, and integrate multiple pieces of information located in a complex document. Sample items are presented in the box below.

R_w-d. Comprehension skills in a document for L4

[Time allocated for reading the text and answering the questions: 7 minutes]

☺ Please look at the table of transportation schedules and fares below. When you have finished reading it silently, read and answer the questions. Circle the best answer to

each question.

TIME & FARE TABLE OF TRANSPORTATION – From KATHMANDU				
Destination	Departure Time AM: in the morning; PM: in the afternoon/ evening	Fare (in Rupees)		
		Child (age 1-6)	Student (with ID)	Adult
Bharatpur	From 6:00 AM, every 1 hour till 5:00 PM	20	50% of Adult fares	60
Dharan	From 6:00 AM, every 1 hour till 4:00 PM	20		70
Dhulikhel	From 5:00 AM, every 15 minute till 8:00 PM	5		20
Dolakha	From 6:00 AM, every 30 minute till 5:00 PM	10		50
Janakpur	From 6:00 AM, every 1 hour till 4:00 PM	20		60
Itahari	From 6:00 AM, every 1 hour till 4:00 PM	20		60
Mahendranagar	From 5:00 AM, every 2 hour till 3:00 PM	30		80
Nepalganj	From 6:00 AM, every 30 minute till 6:00 PM	20		70
Okhaldhunga	From 5:00 AM, every 30 minute till 5:00 PM	15		60
Rasuwa	From 5:00 AM, every 30 minute till 5:00 PM	15		60

1. Shanti wants to go to Dhulikhel to see the morning scenery of "Himal" from there. She usually gets up at 5:00 o'clock in the morning. She wants to get on the third bus leaving for Dhulikhel on that day. What time will her bus depart? [Answer: ③]

① 5:00 AM ② 5:15 AM ③ 5:30 AM ④ 5:45 AM ⑤ 6:00 AM

2. Ram is a secondary school student. He is going to Nepalganj for holidays with his best friend. How much bus fare do they have to pay in total? [Answer: ③]

① 35 rupees ② 50 rupees ③ 70 rupees ④ 80 rupees ⑤100 rupees

3. Which place has the transportation running the most times per day? [Answer: ⑤]

① Bharatpur ② Dolakha ③Okhaldhunga ④ Itahari ⑤ Dhulikhel

Total number of correct answers: /3

4.3.2 Numeracy for Basic level and above

Table 33: Matrix for numeracy

	Numeracy			
	Quantity discrimination	Identifying missing numbers	Applied numeracy	Computing Skills
Decontextualized print	Nw-a	Nw-c	Nw-d	Nw-e
Prose text	N_w-b	·	·	Nw-f
Document text	·	·	·	Nw-g

The assessment of numeracy is based on the matrix presented above and measures a range of math skills of Eastern Tamang adults at various levels. While those at the Below Basic level may be able to perform some of these tasks, the test items are designed to measure the numeracy skills of those at the Basic level and above.

4.3.2.1 Test of quantity discrimination at L2 – L4

This component is to measure the ability of Eastern Tamang adult learners to compare quantities in object groups or numbers and make judgments about differences. Sample items for the three different levels are presented in the box below.

N_w-a & N_w-b. Quantity discrimination for L2, L3, and L4

[Time allocated for reading and answering the questions: 1 minutes]

☺ Please look at each pair of two numbers below. Which one is greater? Circle the greater number.

< Items for L2 >

	Numbers	Correct	Incorrect
1	६ ९		
2	१८ १५		

3	११०	१०१		

4. Mina runs a vegetable shop. She sold 27 kilograms of potatoes, 34 kilograms of onions, 40 kilograms of tomatoes, and 19 kilograms of radishes today. Which vegetable did she sell the most of? [Answer: ④]

①onions ② potatoes ③ radishes ④ tomatoes

Total number of correct answers: /4

< Items for L3 >

Which one is greater? Circle the greater number.

	Numbers		Correct	Incorrect
1	५७	६९		
2	१८४	१९२		
3	२०६	३०१		

4. Ram can carry 53 kilograms of things at the most. Man can carry 46 kilograms and Dorje 70 kilograms. Buddha can carry 65 kilograms. Who can carry the least?

① Buddha ② Dorje ③ Man ④ Ram [Answer: ③]

Total number of correct answers: /4

< Items for L4>

Which one is greater? Circle the greater number.

	Numbers		Correct	Incorrect
1	४५०	५४०		
2	९१९	९९१		
3	२७६८	२६७३		

4. This month, Father spent two hundred twenty-five rupees on electricity, seven hundred –fifteen to purchase rice, three hundred and five rupees on a wedding gift, and one thousand fifty on monthly savings. On what did Father spent the most this month?

[Answer: ②]

① electricity payment ② monthly savings ③ purchasing rice ④ wedding gift

Total number of correct answers: /4

4.3.2.2 Test of identifying missing numbers for L2 – L4

This component assesses the ability of Eastern Tamang adult learners to identify missing numbers. Sample items are presented in the box below.

N_w-c. Identifying missing numbers for L2, L3, and L4

[Time allocated for reading and answering the questions: 1 minutes]

☺ Look at the numbers in different sets. In each set, one number is missing. What number should go in each space? Please write the right number in the space.

< Items for L2 >

	Test items for L2		Answer	Correct	Incorrect
1	___, १८, १९, २०, २१	'___, 18, 19, 20, 21'	१७		

2	___, ३९, ३८, ३७, ___, ३५	'39, 38, 37, ___, 35'	३६		
3	६०, ___, ८०, ९०, १००	'60, ___, 80, 90, 100'	७०		
			Total number of correct answers: /3		

<Items for L3 >

	Test items for L3		Answer	Correct	Incorrect
1	___, ५४, ५६, ५८, ६०	'___, 54, 56, 58, 60'	५२		
2	___, ९३, ९२, ९१, ९०, ___	'93, 92, 91, 90, ___'	८९		
3	२१०, _____, २२०, २२५, २३०	'210, ___, 220, 225, 230'	२१५		
		Total number of correct answers: /3			

< Items for L4 >

	Test items for L4		Answer	Correct	Incorrect
1	___, ६००, ७००, ८००, ९००	'___, 600, 700, 800, 900'	५००		
2	_____, ९७८, ९७६, ९७४, ९७२, _____	'978, 976, 974, 972 ___'	९७०		
3	१४५६, १४५८, _____, १४६२, १४६४	'1456, 1458, ___, 1462, 1464'	१४६०		
		Total number of correct answers: /3			

4.3.2.3 Test of skills in applied numeracy for L2 – L4

This component targets the ability of Eastern Tamang adult learners to identify and apply the measuring systems and procedures of their culture in written form. The written test items for this component measure their ability to 1) tell time from either an analogue or digital clock, 2) read the value of money from different pieces of currency, and 3) read a calendar to tell a date (month and day) or a day of the week. Sample items for three different levels are presented in the box below.

N_w-d. Skills in applied numeracy for L2, L3, and L4

[Time allocated for reading and answering the questions: 5 minutes]

☺ Please look at the examples each clock carefully and write the correct time in the space.

For example[55]:

1) 9 o'clock

2) **6:10** 6 o'clock and 10 minutes

< Test items[56] for L2 >

1.

2.

3. **4:15**

_____ _____ _____

< Items for L3 >

1.

2.

3. **6:00**

_____ _____ _____

[55] This image of clock is retrieved [April 10, 2011] and copied from a web site for a worksheet of writing time, http://donnayoung.org/f11/math-f/clocks/writtime.pdf.

[56] The images of clock for test items are retrieved [April 10, 2011] and copied from another web site of telling time worksheet, http://www.theteacherscorner.net/printable-worksheets/make-your-own/telling-time/telling-time-worksheet.php.

<Items for L4>

1.

2.

3. **5: 17**

_____ _____ _____

☺ Please look at each picture[57] of different bills and write in words how much it is worth in the space.

For example: पांच रुपैयाँ

< Test items for L2 >

4. _____ रुपैयाँ

5. _____ रुपैयाँ

[57] These pictures of Nepali money were retrieved [April 10, 2011] and copied from a web site of world bank notes, http://www.banknotes.com/np.htm.

<Items for L3 >

4. _____ रुपैयाँ

5.

_____ रुपैयाँ

<Items for L4>

4. _____ रुपैयाँ

5. _____ रुपैयाँ

☺ Please read each question carefully and refer to the calendar below to find an answer for each question. Circle the right date or day under each question.

२०६७ चैत्र			March – April 2011			
आइतबार Sun	सोमबार Mon	मंगलबार T es	बुधबार ed	बिहीबार Thu	शुक्बार Fri	शनिबार Sat
		०१ 15	०२ 16	०३ 17	०४ 18	०५ 19 पहाडि क्षेत्रमा फागु
०६ 20 तरई क्षेत्रमा फागु	०७ 21	०८ 22	०९ 23	१० 24	११ 25	१२ □ □

१३ 27	१४ 28	१५ 29	१६ 30	१७ 31	१८ 1	१९ 2
२० 3 घोडे जात्रा	२१ 4	२२ 5	२३ 6	२४ 7	२५ 8	२६ 9
२७ 10	२८ 1□ □	२९ 12 क्षी राम नवमी	३० 13	बैशाख १ नयाँ वष २०६८ सुरु		

< Items for L2 >

6. What is the date of the first Wednesday of चैत्र? [Answer: ②]

① १ गते ② २ गते ③ ६ गते ④ ११ गते

7. In this month of चैत्र, how many official holidays are there? [Answer: ③]

① ४ दिन ② ५ दिन ③ ६ दिन ④ ७ दिन

8. What day is the last day of चैत्र? [Answer: ②]

① मंगलबार ② बुधबार ③ बिहिबार ④ शनिबार

Total number of correct answers: /8

< Items for L3 >

6. What is the date of the third Thursday of चैत्र? [Answer: ③]

① ३ गते ② ९ गते ③ १७ गते ④ २५ गते

7. What is the corresponding date of चैत्र ५ गते? [Answer: ②]

① March 15 तारिक ② March 19 तारिक
③ March 21 तारिक ④ March 26 तारिक

8. What day is it when the new year 2068 BS begins? [Answer: ③]

① आइतबार ② मंगलबार ③ बिहिबार ④ शनिबार

Total number of correct answers: /8

< Items for L4 >

6. What is the date of the last day of 2067 BS? [Answer: ①]

① April 13 तारिक ② March 13 तारिक
③ March 14 तारिक ④ April 14 तारिक

7. Which pair of a date and a day is correct? [Answer: ③]

① चैत्र ७ गते – आइतबार ② चैत्र १२ गते – बिहिबार
③ April 12 तारिक – मंगलबार ④ March 18 तारिक – शनिबार

8. What is the corresponding date of बैशाख २ गते? [Answer: ④]

① March 13 तारिक ② April 14 तारिक
③ March 14 तारिक ④ April 15 तारिक

Total number of correct answers: /8

4.3.2.4 Test of computing skills for L2-L4

This component assesses Eastern Tamang adult learners' basic knowledge of addition, subtraction, multiplication, and division and the ability to solve arithmetic problems both in formulae and in word problems. Test items of this component are devised to measure: 1) the ability to solve simple arithmetic operations and 2) the ability to identify and locate numeric information embedded in a prose text and a document and to solve word problems. Sample items are presented in the boxes below.

Nw-e. Computing skills in decontextualized print for L2

[Time allocated for reading and answering the questions: 4 minutes]

☺ Please look at each problem carefully and write the correct answer in each box.

< Items for L2 >

1. ८ + ३ = ☐
2. १४ + २९ = ☐
3. १० - ४ = ☐
4. ४७ - ८ = ☐
5. ६ x ५ = ☐
6. ९ x ९ = ☐
7. ३५ ÷ ५ = ☐
8. ७२ ÷ ८ = ☐

Total number of correct answers: /8

< Items for L3 >

1. ৩৮ + ৫৩ = ☐
2. ৪৪ + ৬৯ = ☐
3. ২২ - ১৪ = ☐
4. ৯৩ - ৩৯ = ☐
5. ১০ x ৫ = ☐
6. ২৫ x ৮ = ☐
7. ৩০ ÷ ৩ = ☐
8. ২৪০ ÷ ১০ = ☐

Total number of correct answers: /8

< Items for L4 >

1. ৩৮ + ৬৩ = ☐
2. ৩৪৪ + ৬৬৯ = ☐
3. ১০২ - ৫৪ = ☐
4. ৮৩১ - ৪৩৯ = ☐
5. ৫৪ x ৫ = ☐
6. ২২৫ x ৮ = ☐
7. ১৪০ ÷ ৩ = ☐
8. ৬১২ ÷ ১২ = ☐

Total number of correct answers: /8

N_w-f. Numerical questions using a prose text for L2 – L4

[Time allocated for reading and answering the questions: 4 minutes]

☺ Please read the passage and questions related to it carefully. Circle the best answer to each question

< Items for L2 >

Madan raises six goats, eleven chickens, and three buffaloes at home. Tomorrow, he is going to sell three chickens and two goats to one of his neighbors. Then, he is going to buy a cow to get some milk for his family.

1. How many kinds of livestock does Madan raise at home?

① २ ② ३ ③ ४ ④ ६ [Answer: ②]

2. When Madan sells the three chickens to his neighbor, how many chickens will he have left?

① ४ ② ६ ③ ८ ④ ९ [Answer: ③]

3. After selling three chickens and two goats to his neighbor, how many livestock altogether will he still have?

① १५ ② १६ ③ १७ ④ १८ [Answer: ①]

Total number of correct answers: /3

< Items for L3 >

Basun is attending a literacy class in her village. Basun is a 35-year old women married to Deepak, her husband, who is 38 years old. Basun has been happily married for 18 years. Basun and Deepak have five children – Two sons and three daughters.

Their eldest son, Ram, is 17 years old, and second son, Man, 15 years old. Their eldest daughter, Mina, just turned 13 years old last week and second one is 11 years old. Their youngest daughter is going to be 10 years old next week.

Next month, her eldest son is going to marry to a beautiful girl the same age as him. Basun is going to have a bigger family sooner or later.

1. What is the difference between Basun's and Mina's ages?

① ११ ② १२ ③ १३ ④ १५ [Answer: ②]

2. What is the difference between Deepak's age and his youngest child's age?

① २१ ② २७ ③ १८ ④ १७ [Answer: ①]

3. What is the total sum of ages of Maya's children? Write the number of sum in the space.

Total _____ years [Answer: '65']

Total number of correct answers: /3

< Items for L4 >

Yesterday, my father left home early in the morning toward the market. He had to carry lots of things in his bamboo basket for 5 hours. In the market, Father sold 3 sacks of potatoes, 5

sacks of beans, 4 bottles of sesame oil, and 2 dozens of chicken eggs at the market yesterday. Potatoes were sold out at the price of 50 rupees per sack. Beans were sold out at 45 rupees per sack. Sesame oil was sold out at 60 rupees per bottle and chicken eggs at 4 rupees per egg.

My father was so happy that he could sell out everything he took to the market and make enough money to buy some rice, soaps, and toothpaste. He bought 4 sacks of rice at the price of 120 rupees per sack, 10 cakes of soap at 10 rupees per cake, 4 tubes of toothpaste at 30 rupees per tube. On the way home, he could drop by a teashop and ordered a cup of milk tea for him. He didn't forget to buy a pack of biscuit for us. So, he came back home in the evening with no money just as the same as when he left home in the morning.

1. How much money did Father get by selling potatoes?

① ५० ② ९६ ③ १५० ④ २२५ ⑤ २४० [Answer: ③ '150']

2. What is the total sum of the money that Father earned from selling things yesterday? Write the total sum in numbers in the space below.

_____ rupees [Answer: '711']

3. If Father wanted to buy as many cakes of soap as possible from the money earned from selling sesame oil, how many cakes of soap could he buy? Write the quantity in numbers in the space below.

_____ cakes of soap [Answer: '24']

Total number of correct answers: /3

N_w-g. Computing skills in a document for L2 – L4

[Time allocated for reading and answering the questions: 4 minutes]

☺ Please read the document and questions related to it carefully. Circle the best

answer to each question.

< Items for L2 >

List of School Supplies to purchase				
ITEM		QUANTITY	UNIT PRICE	COST
1	notebook	7	5	
2	pencil	3 boxes	10	
3	pen	2 boxes	10	
4	eraser	5	3	
5				
			TOTAL COST:	

1. How much will be the cost of the pens? [Answer: ②]

① 15 rupees ② 20 rupees ③ 25 rupees ④ 30 rupees

2. What will be the difference between the cost of the pencils and the cost of the erasers? [Answer: ①]

① 15 rupees ② 20 rupees ③ 25 rupees ④ 30 rupees

3. What will be the total value of the purchases? [Answer: ①]

① 100rupees ② 85 rupees ③ 65 rupees ④ 45 rupees

Total number of correct answers: /3

< Items for L3 >

Today's Weather Records[58]			
Stations	Max. temp. (ºC)	Min. temp (ºC)	24 hrs Rainfall (mm)#
Dadeldhura	21.7	7.0	0.0
Dipayal	31.7	10.7	0.0
Dhangadi	34.1	14.7	0.0
Birendranagar	31.6	13.0	NA
Nepalgunj	33.8	16.0	0.0
Jumla	17.4	2.5	5.7
Pokhara	29.9	15.4	0.0
Bhairahawa	34.8	18.9	Tr.0
Simra	29.7	18.5	0.0
Kathmandu	27.6	11.0	0.7
Taplejung	18.6	9.2	8.2
Dhankuta	21.0	12.6	3.6
Biratnagar	25.4	16.4	29.2
Jiri	19.0	5.5	2.1*
Jomsom	16.2	-1.5	Tr.0*
Dharan	26.8	17.0	4.5*

1. What is the difference between maximum temperature and minimum temperature in Kathmandu today? [Answer: ④]

① 0.7 ˚C ② 11.0 ˚C ③ 16.0 ˚C ④ 16. 6 ˚C

2. What is the difference between the maximum temperature of Biratnagar and that of Jumla? Write the temperature difference in numbers in the space below.

_____ ˚C [Answer: '8'/ '8.0']

3. What is the difference between the greatest amount and the second greatest amount of rainfall today? _____ mm [Answer: 21 mm]

[58] This chart is retrieved [April 4, 2011] and copied from the web site of Metrorogical Forecasting Division of the government of Nepeal for weather forecast, http://www.mfd.gov.np.

Total number of correct answers: /3

< Items for L4 > Load Shedding Schedule - 07 February 2011

Group	SUN	MON	TUES	WED	THURS	FRI	SAT
1. Mangalbazar, Tripureshwor, Tahachal, Pulchowk, Baneshwor, Bagmati Bridge, Koteshwor, Jorpati, Sankhu, Keshar Mahal, Lazimpat, Kamladi, Budha-nilkantha, Khichapokhari	01:00-08:00 13:00-20:00	11:00-18:00 22:00-05:00	09:00-16:00 20:00-03:00	08:00-15:00 18:00-01:00	06:00-13:00 17:00-24:00	04:00-11:00 16:00-23:00	02:00-09:00 15:00-22:00
2. Pharping, Byasi, Thankot, Thapathali Kalimati, Imadol, Gothatar, Naya Bazar, Thankot, Dhulikhel, Ason, Bansbari,Tripuresore, Putalisadak	02:00-09:00 15:00-22:00	01:00-08:00 13:00-20:00	1:00-18:00 22:00-05:00	09:00-16:00 20:00-03:00	08:00-15:00 18:00-01:00	06:00-13:00 17:00-24:00	04:00-11:00 16:00-23:00
3. Patan, Thankot, Kalimati, Godavari-1, Naxal, Airport, Om Hospital,Gairi Dhara, Sanga, Maha Boudhha, Baluwatar, Kalikasthan,Tin Piple, Palanchowk	04:00-11:00 16:00-23:00	02:00-09:00 15:00-22:00	01:00-08:00 13:00-20:00	11:00-18:00 22:00-05:00	09:00-16:00 20:00-03:00	08:00-15:00 18:00-01:00	06:00-13:00 17:00-24:00
4. Ringroad, Pulchowk, New Airport, Dhobhikhola, Danchi, Lazimpat, Nagarjun, Swayambh, Kalimati, Khawa, Sanepa, Teku, Patan, Balkumari, New Road	06:00-13:00 17:00-24:00	04:00-11:00 16:00-23:00	02:00-09:00 15:00-22:00	01:00-08:00 13:00-20:00	11:00-18:00 22:00-05:00	09:00-16:00 20:00-03:00	08:00-15:00 18:00-01:00
5. Saibu, Katunje, Nalinchowk, Old Airport, Battisputali, Tangal, Sundarijal, Bishnumati , Maharajgunj-1, Kalanki, Gongabu, Anamnagar, Melamchi	08:00-15:00 18:00-01:00	06:00-13:00 17:00-24:00	04:00-11:00 16:00-23:00	02:00-09:00 15:00-22:00	01:00-08:00 13:00-20:00	11:00-18:00 22:00-05:00	09:00-16:00 20:00-03:00

6. Radio Nepal, Pulchowk, Nagarkot, Lubhu, Thamel, Dhramshali, Rope way, Kalimati, Nala, Durbarmarg, Thimi, Panchkhal	09:00-16:00 20:00-03:00	08:00-15:00 18:00-01:00	06:00-13:00 17:00-24:00	04:00-11:00 16:00-23:00	02:00-09:00 15:00-22:00	01:00-08:00 13:00-20:00	11:00-18:00 22:00-05:00
7. Chapagaon, Jawalakhel, Kirtipur, Sankhamul, Pashupati, Mahankal, Samakhusi, Balambu, Swayambu Hosiptal, Khopasi, Panuti, Galfutar, Sallaghari, Bhotebahal, Bhrikuti Mandap	11:00-18:00 22:00-05:00	09:00-16:00 20:00-03:00	08:00-15:00 18:00-01:00	06:00-13:00 17:00-24:00	04:00-11:00 16:00-23:00	02:00-09:00 15:00-22:00	01:00-08:00 13:00-20:00

1. Maya lives in Lazimpat which belongs to Group 4. When will she have light on Thursdays? Write the time period in the space below. [Answer: '06:00'-'10:00' & '19:00'- '21:00']

_____ - _____ and _____ - _____

2. How many hours is the electricity provided per day in all areas of the Kathmandu Valley? [Answer: '10'] _____ hours per day

3. How many hours is the electricity cut off per week in all areas of the Kathmandu Valley? [Answer: '98'] _____ hours per week

Total number of correct answers: _____ /3

4.3.3 Writing skill: Dictation for L2 – L4

This task seeks to measure the ability of Eastern Tamang adult learners to use

writing implements (e.g., pencil, pen, paper) properly and to produce written language for effective communication. Eastern Tamang adults at the Below Basic level may be able to write their own name and some numbers, letters, and syllables of the Eastern Tamang alphabet, and a few common sight words frequently used in their daily life. Individuals at the Basic level are expected to be able to write words, phrases, and simple sentences, using appropriate punctuation and spacing. Those at the Intermediate and Advanced levels are able to write sentences with increasing complexity and more difficult vocabulary. Sample items for this component are presented in the box below.

W-a. Dictation for L2 – L4

[Time allocated for dictation: 5 minutes]

☼ Instructions: When the allocated time for written tests of reading and numeracy is over, the assessor asks the group of test takers to open the last page of the student sheet for the writing test. Then the assessor says, "Now, I am going to read aloud some words, phrases, and sentences to you. I would like you to write them one after another in the numbered spaces. First of all, please write your full name on the first line which is not numbered." The assessor allows 5-10 seconds for the test takers to write their names.

"Now, I will say each word, phrase, and sentence three times for you. When you write phrases and sentences, please try to use spacing and proper punctuation. Please listen carefully and try your best." The assessor should read each phrase and sentence once through and then repeat it word by word as the test takers write. The reading should

be done slowly but smoothly.

< Items for L2 >

Your Full Name:_____

1. _____ ‘hand’

2. _____ ‘book’

3. _____ ‘healthy’

4. _____ ‘to write’

5. _____ ‘to plant a tree’ (purpose)

6. _____ ‘What time is it?’

7. _____ ‘Can you read in Tamang language?

*Total number of correct words: /total number of words

Total number of correct punctuations marks: /total number of punctuations

Total number of correct spacing: /total number of spacing

*Scoring: For marking, the assessor circles every word and item of punctuation which is written correctly, and checks for spacing used correctly. Then the assessor counts the total number of correct items circled or checked. However, the test taker’s name is not included in scoring items. It is just for assuring that the test taker can write his or her name properly.

< Items for L3 >

Your Full Name: _____

1. _____ ‘committee’

2. _____ ‘to develop’ (verb)

3. _____ ‘education’

4. _____ ‘because of bad habits’

5. _____ ‘to build a toilet’ (purpose)

6. _____

‘People in Nepal love the color red and sweet milk tea.’

7. _____

‘Do you see lice in others’ hair while you do not feel a buffalo walking on your back?’

Total number of correct words: /total number of words

Total number of correct punctuation marks: /total number of punctuations

Total number of correct spacing: /total number of spacing

< Items for L4 >

Your Full Name: _____

1. _____ ‘government’

2. _____ ‘certificate’

3. _____ ‘family plan’

4. _____ ‘to run a literacy class’ (purpose)

5. _____

‘Education can bring development in the personal and communal life.’

6. _____

‘The habit of washing hands keeps you from many kinds of diseases.’

7. _____

‘Planting trees and conserving forest should be the main project of our village.’

Total number of correct words: /total number of words

Total number of correct punctuation marks: /total number of punctuations

Total number of correct spacing: /total number of spacing

5 METHODOLOGY

This chapter aims to provide a broad methodological sketch of all the phases of developing an assessment for the Eastern Tamang people, which can then be generalizable for other language groups in Nepal as well.

5.1 Identification and Training of a Committee

When a local, national, or international literacy organization in Nepal wants to develop a literacy assessment, it should first identify the stakeholders of the literacy program who would want to know and use results from the assessment. In the context of Nepal, any literacy organization might identify the following stakeholders: participants/learners, teachers, facilitators/coordinators, supervisors, advisors/consultants, program manager/director, village education committees, regional and/or national education officers, educational policy makers, and local/national/international financial donor agencies. The assessment committee needs to include representatives from all stakeholders (or as many as feasible).

The assessment committee should first agree on a definition of literacy and literacy skills as well as the purpose of the program and the assessment to be developed. Then the committee should identify the literacy skills to be assessed. The committee needs to refine the standard of literacy performance levels I proposed in chapter 3. The

committee should also plan the types of tests, devising test item pools, pilot testing, details of the assessment implementation, recruiting and training the assessors, scoring and data processing, and reporting protocols.

If necessary, delegates from the assessment committee may visit potential test sites in advance. They need to contact local community leaders as well as regional education officers to explain to them the purpose, procedures, and benefits of the assessment. In this way, the delegates can gain their cooperation for the assessment. They may also want to contact central and/or regional government agencies interested in developing assessment instruments for the indigenous people groups of Nepal. Hopefully, they will be able to arrange for collaboration from these institutions as well. This kind of collaboration could be the first significant step toward developing a national assessment instrument for the indigenous languages of Nepal.

5.2 Development of Language Specific Instruments

To facilitate literacy assessment for the Eastern Tamang Language Team, I have constructed an instrument, as presented in chapter 4, mainly in English mixed with Eastern Tamang language in several sections. All the test items and instructions written in English will be rendered into the Eastern Tamang language and revised by the assessment committee. Then the revised instrument will be printed for pilot testing.

Hopefully, the instrument I have designed will serve as a model for the development of similar literacy assessments in other indigenous languages of Nepal. However, this particular instrument is based on linguistic features of Eastern Tamang as

well as the goals of the Eastern Tamang literacy program. For this reason, the instrument should not be merely translated but adapted to be linguistically and culturally appropriate to each language context.

5.3 Piloting

Before the actual assessment is administered, some pilot testing needs to be planned and conducted to test the instrument and the assessment procedures. The pilot test can be conducted in two villages with 20 – 40 participants at the end of the advanced course. Any Eastern Tamang adults who want to take the assessment and check their literacy level can be included in the assessment population for the pilot testing as well as the actual assessment implementation.

This pilot test has the following objectives:

1) Test the validity of the assessment – how effectively does the assessment measure the literacy skills that it intends to measure? Are there any test items too difficult or too easy?
2) Establish the appropriateness of the procedure of test administration – Is the length of the tests proper or too long? Are the instructions of each test clear enough?
3) Test logistical issues –Does the facility provided for the assessment have enough space and light? Are there enough desks and chairs for the test takers? Will the environment of the facility protect test takers from disturbances? Are all test materials prepared well before the test, distributed at the right time during the test, and properly collected after the test?

5.4 Finalization of Instrument

The early draft of test items and instructions used in the pilot test, as well as the

methods of data collection, will be modified according to the results of the pilot. The assessment committee should verify the revised instrument and procedures through a thorough discussion of every change in accordance with the original purpose of the assessment. There should be an agreement among the committee members that the final version of the instrument and instructions for the assessors (or the test administration manual) will ensure successful implementation of the assessment. The final draft of the instrument should then be printed and the assessors retrained.

5.5 Implementation

5.5.1 Development of an assessment protocol

Before training the assessors for the pilot testing, the assessment committee needs to develop a written assessment protocol or a test administration manual to provide the assessors with consistent quality control guidelines for the assessment. The assessment protocol will contain information about the following:

1) the purpose of the assessment;
2) descriptions of the assessment instrument system;
3) descriptions of literacy skill levels determined;
4) detailed instructions for administering tests;
5) testing accommodations and materials;
6) test security guidelines.

This protocol may also need to be revised and confirmed after the pilot testing. Each assessor should be provided with a printed copy of the assessment protocol. The

assessors should administer the assessment carefully according to this protocol.

5.5.2 Identification and training of assessors

The assessment committee is responsible for recruiting potential assessors who speak the language as a mother tongue. These assessors can include teachers and supervisors from the literacy program. The assessors need to be trained in the following areas:

1) the purpose of the assessment;
2) the content and procedure of the assessment;
3) communication and interviewing skills especially with respect to adult test takers who may be taking tests for the first time in their lives;
4) specific instructions on how to administer each assessment protocol to test takers;
5) scoring and coding;
6) procedures for securing all data and test materials.

5.5.3 Implementation of assessment

In terms of when, how, and for whom the instrument will be used, the assessment committee should develop general guidelines according to the local communities' "cultural calendar" or work pattern as well as the schedule of the literacy program. One obvious option is to do an assessment at the end of the three – month long advanced literacy course which is a follow up program to the seven month long basic course. The assessment can be administered to any participants or graduates from the basic and advanced literacy courses run by the Eastern Tamang Language Team. Other Eastern

Tamang adults who have been to school and want to identify their skill levels can be included in the assessment population. The assessment committee may need to plan for some kind of advance registration process for the assessment so that an overall schedule can be developed.

All test materials required in the assessment should be prepared for the relevant tests. Clipboards may need to be purchased for each test taker living in a village where a desk or a flat surface is not available. Other test materials required in the literacy assessment for Eastern Tamang adults are listed below:

1. General requirement for all tests
    1) For each assessor – Interview sheet, test administration manual or instruction sheet, record sheet with test items and questions for each test taker, stopwatch, pencil, eraser;
    2) For each test taker – pencil, eraser, clipboard (only when necessary).
2. Oral test
    1) Book & print awareness and understanding and interpreting illustrations: for the assessor – a book with illustrations of a boy having diarrhea and a woman having the boy on her lap drink water;
    2) Discerning shapes: for the assessor – a student sheet with two different sets of shapes on it and ten cards with diverse shapes on it;
    3) Alphabet knowledge: for the assessor – a student sheet with 13 letters written on it;
    4) Phonological awareness: for the assessor – twenty-tree letter cards for blending and a student sheet with ten words written on it;
    5) Number identification: for test takers – a student sheet with fifteen numbers written on it;
    6) Applied numeracy: for the assessor – a watch, two coins of different value, five bills/notes of different value, and a Tamang calendar;
    7) Oral word recognition: for the assessor – a student sheet with thirteen words written on it;

8) Accuracy of word reading: for test takers – a student sheet with the numbered fifteen words written on it;
9) Accuracy and fluency of passage reading: for test takers – a student sheet with a passage written on it, MP3 or another audio-recording device with extra batteries.

3. Written test: for test takers –a set of student sheets or test booklet for reading skill, numeracy, and writing skill tests.

Before assessment sessions begin, all required test materials need to be set properly. The assessment needs to begin with introducing the purpose and procedures of the assessment to the whole group of test takers. The test takers should also be informed that the test result for each individual will be reported in written form after a certain period of time. The Eastern Tamang language should be used in the whole process of the assessment including the introduction. The whole process of the assessment needs to be monitored by a designated supervisor and a regional education officer (if available) so that they can make suggestions for improvement in the assessment implementation.

5.5.3.1 Brief interview for background information

Since the first session would be the individual oral test, the assessor(s) will interview test takers one by one. The assessor starts the oral test session with a brief interview to get some background information from the test taker. The information to be gathered from each test taker is as follows: name, age, gender, marital status, mother tongue, the highest grade of education completed, previous experience in a literacy program. The assessor should conduct the interview in an informal, conversational mode, being careful not to lapse into spontaneous conversations of detailed educational

experiences. Questions of background information are presented in Appendix G. The assessor(s) should record the responses from each test taker on the interview sheet which is the first page of the record sheet for the oral test for each examinee. The assessor(s) should not forget to write his or her own name as an interviewer, the date of the interview, the name of the village and district, and the name of the literacy teacher who taught the respondent. The information gathered from the interview will be used to analyze data from the assessments.

5.5.3.2 Entry point diagnostic test

After the brief interview, the assessor will give a one-minute diagnostic reading test using a short passage. The assessor asks the test taker to read the passage. Based on the initial performance, the assessor will make a judgment as to which assessment each test taker should take. Test takers will then be classified into different level groups for the oral and written tests.

5.5.3.3 The oral test

The oral test consists of a total of 131 test items – 73 items for the Non-literate level (L0), 115 for the Below Basic level (L1), 83 for the Basic level (L2), and 6 for the Intermediate (L3) and the Advanced (L4) levels – in up to twelve sections. A different set of oral test sections will be given for those at different levels. The oral assessment is expected to take 15 minutes for L0, 25 minutes for L1, 20 minutes for L2, and 6 minutes for L3 and L4. It will be conducted one-on-one with an assessor and one test taker.

When there are more than ten participants in a village class, it would be necessary to have more than one trained assessor –in fact, as many as possible – administering the oral test so that the other test takers would not wait long for their turns. Three or four assessors can administer the oral test in different classrooms at the same time if such facilities are available. When the test is conducted with a smaller number (less than ten) of participants, two assessors, one as the main assessor and another as the assistant, can collaborate for administering the test.

Another strategy for keeping silence around the facility and having the other test takers' time fully engaged is to hold a two hour-long creative writing contest. The teacher of the literacy program can be prepared for that special event with the help of the literacy personnel. At the end of the contest, awards need to be presented and all the written works will be collected for later use.

5.5.3.4 Written test

The written test consists of a total of 46 test items for the Basic level (L2) and 42 items for both the Intermediate (L3) and the Advanced (L4) levels. Different written tests will be given to those at different levels. The written test is expected to take 36 minutes for L2, 34 minutes for L3, 39 minutes for L4. The written test can be conducted in a group setting with the main assessor (and his or her assistant assessor(s)) and a group of test takers all at the same level. Each assessor administers the written test with the group of test takers in a separate room if possible.

In the beginning of the written test, the assessor should ask the test takers to write

their name on the designated section of the student sheet. The assessor also needs to inform them that each test taker is allowed to stop responding to the test items, submit the student sheet and all other test implements, and leave the test site at the point that he or she feels the test items in the remaining sections are too difficult. At the same time, the examinees should be encouraged to try their best on as many items as possible. When any examinee submits the student sheet, the assessor should ensure that his or her name is written down correctly.

When the test takers submit their student sheets or the allotted time for the written test is over, the assessor collects all student sheets and other test implements. The assessor should sort the student sheets and put each one into the envelope for each test taker in which the record sheet of the oral test was enclosed. The assessors should bring all these envelopes and test implements back to the main office of the literacy program.

5.5.4 Scoring and analysis protocol

The assessment committee needs to discuss and plan the specifics of scoring such as symbols to use in marking, double checking on scoring, and how to record the score. Scoring guidelines and scoring keys as well as the scoring weight and passing scores should be written in the scoring protocol developed by the assessment committee. The assessors need to be trained to follow the procedures developed for scoring the test according to the protocol.

Along with the scoring protocol, the committee also needs to discuss and develop a data coding and analysis protocol dealing with the following issues:

1) what kind of coding system to employ;
2) who will be in charge of data entry into a computer system;
3) which statistical tests or methods should be used for validity and reliability of the test and/or inferences to make;
4) when and what kind of external resources – for example, a data analysis expert or consultant – are needed.

5.5.5 Reporting

Each individual test taker will receive a report of their test scores of reading, writing, and numeracy as well as a total score. Each individual also needs to be informed about the skill level he or she has attained. Individual reports could also give suggestions about the areas to be improved.

A standard report form needs to be developed by the assessment committee. As this literacy assessment instrument is a criterion-referenced test which measures individuals' mastery of literacy tasks, the report may include raw scores (the number of correct items), scale scores (the transformed raw scores by rating the difficulties of test items) with percentile level, and the standard or passing score of each literacy skill as well as the performance proficiency level. Samples of a report form for each level is presented in the tables below (Table 34-36).

Table 34: A sample report form for L0 and L1

EASTERN TAMANG LITERACY ASSESSMENT
Confidential Examinee Report

Name:_____ Test Date:_____
Report Date:_____ Test Site: _____

1. Precursor Literacy Skills	Items: Correct	/Tested	Scale Score	Percentile
1) Book & print awareness	_____	/5	_____ /____	_____
2) Illustration interpretation	_____	/3	_____ /____	_____
3) Discerning shapes	_____	/3	_____ /____	_____
4) Alphabet knowledge	_____	/10	_____ /____	_____
5) Phonological awareness	_____	/17	_____ /____	_____
TOTAL:	_____	/38	_____ /____	_____(%)

2. Oral Numeracy	Items: Correct	/Tested	Scale Score	Percentile
1) Oral counting fluency	_____	/20	_____ /____	_____
2) Number identification	_____	/15	_____ /____	_____
TOTAL:	_____	/35	_____ /____	_____(%)
3. Oral Reading*	Items: Correct	/Tested	Scale score	Percentile
1) Word recognition	_____	/10	_____ /___	_____
2) Word Accuracy	_____	/15	_____ /___	_____
TOTAL:	_____	/25	_____ /___	_____(%)

Standard Score:_____ Met Standard: YES or NO Literacy Skill Level:_____
Skill Level Description:_____
_____
Areas to improve:_____
_____
Document #:

*As test takers preclassified into the Non-literate level (L0) will not have test items from this component, this oral reading section of the report form for them should be noted as "NOT TESTED."

Table 35: A sample report form for L2

EASTERN TAMANG LITERACY ASSESSMENT
Confidential Examinee Report

Name:_____ Test Date:_____
Report Date:_____ Test Site: _____

1. Oral Numeracy	Items: Correct	/Tested	Scale Score	Percentile
1) Oral counting fluency	_____	/20	_____ /____	_____
2) Number identification	_____	/15	_____ /____	_____

3) Applied numeracy	_____	/17	_____	/____	_____
TOTAL:	_____	/52	_____	/____	_____(%)
2. Oral Reading	Items: Correct	/Tested	Scale Score		Percentile
1) Word recognition	_____	/10	_____	/____	_____
2) Accuracy-Word	_____	/15	_____	/____	_____
3) Accuracy & Fluency-Passage	_____	/ 1	_____	/____	_____
4) Comprehension	_____	/5	_____	/____	_____
TOTAL:	_____	/31	_____	/____	_____(%)
3. Written test	Items: Correct	/Tested	Scale score		Percentile
1) Reading	_____	/10	_____	/___	_____
2) Numeracy	_____	/29	_____	/___	_____
3) Writing	_____	/7	_____	/___	_____
TOTAL:	_____	/46	_____	/___	_____(%)

Standard Score:_____ Met Standard: YES or NO Literacy Skill Level:_____
Skill Level Description:_____
_____
Areas to improve:_____
_____
Document #:

Table 36: A sample report form for L3 & L4

EASTERN TAMANG LITERACY ASSESSMENT
Confidential Examinee Report

Name:_____ Test Date:_____
Report Date:_____ Test Site: _____

1. Oral Reading	Items: Correct	/Tested	Scale Score		Percentile
1) Accuracy & Fluency-Passage	_____	/1	_____	/____	_____
2) Comprehension	_____	/5	_____	/____	_____
TOTAL:	_____	/6	_____	/____	_____(%)
3. Written test	Items: Correct	/Tested	Scale score		Percentile
1) Reading	_____	/6	_____	/___	_____
2) Numeracy	_____	/29	_____	/___	_____
3) Writing	_____	/7	_____	/___	_____
TOTAL:	_____	/42	_____	/___	_____(%)

Standard Score:_____ Met Standard: YES or NO Literacy Skill Level:_____
Skill Level Description:_____
_____
Areas to improve:_____
_____
Document #:

More general results will be reported to stakeholders such as teachers, village education committees, the ETLT executive committee, regional educational officers, and financial donors. The findings of the assessment can be interpreted to evaluate the efficiency of the present curriculum, literacy materials, teaching methods, and the length of the literacy program. The recommendations made by the assessment team can be applied to improve the effectiveness of the literacy program as well as the quality of the assessment instrument for the next use.

6 SUMMARY

Since 1950, Nepal has been trying to increase literacy among its adult population through various literacy initiatives by local, national, and international organizations. However, ways to measure adult literacy skills and a systematic set of standards for classifying the literacy skills of individuals and communities has received scant attention. Nepal has been relying on literacy data from its census which are entirely based on questionnaires of self-assessment or the number of years of schooling, rather than more objective and reliable data from direct measurement.

In accordance with Education for All and the UN Literacy Decade since 2003, there has been increasing emphasis on monitoring and evaluating literacy in Nepal. UNESCO Kathmandu, in collaboration with the NFE Center and the Central Bureau of Statistics, has recently started an initiative to assist educational authorities to obtain quality statistical data on literacy in Nepal using the literacy module of LAMP in national household surveys. However, the effort is only at the beginning stage now and there are few resources to extend assessment to mother tongue-based adult literacy programs in Nepal. Furthermore, literacy agencies in Nepal have currently paid much more attention to multilingual education in formal school settings than to adult literacy. Fledgling mother tongue-based literacy programs in Nepal need more support and resources to fully develop. Thus, I have been motivated to develop an assessment instrument for the

Eastern Tamang adult literacy program based on my experiences with the Eastern Tamang people, hoping that this can be a model for similar assessments in other indigenous languages of Nepal.

The first chapter of this thesis presents background information on Nepal and the Eastern Tamang people as well as a brief overview of the state of adult Non-Formal Education in Nepali and vernacular languages, including the Eastern Tamang language. The second chapter is a literature review which seeks to provide a solid practical and theoretical framework for developing literacy assessment in Nepal. The chapter reviews different methods and models of literacy assessment, various definitions of literacy, and diverse kinds of literacy skills and skill levels. The third chapter proposes six general guidelines for developing a literacy assessment instrument for the Eastern Tamang community. The chapter emphasizes that developing a valid, reliable, and objective assessment should be an integral part of a literacy program plan in collaboration with the various stakeholders of the program.

The assessment model for the Easter Tamang language consists of two main tests – oral and written – based on the models of the BLC/SQC, the EGRA, and the EGMA. This instrument consists of a total of 131 oral test items and 46 written test items. The oral test requires 25 minutes and the written tests 39 minutes at maximum. The fourth chapter describes the contents of both oral and written tests according to the selected test components and literacy skill levels. The chapter also provides detailed instructions for the assessor along with the time allotted for each section. The fifth chapter on

methodology describes the stages of development for this kind of assessment.

The proposed assessment instrument is a criterion-referenced test to be administered at the end of the advanced literacy course. It will measure the literacy skills of Eastern Tamang adult learners based on the linguistic features of the Eastern Tamang language and the cultural contexts they encounter often. The instrument is developed on the following definition of mother tongue literacy for the Eastern Tamang people, which was adopted and modified from the national and UNESCO's definitions of literacy:

> Literacy is the ability to identify, understand, interpret, create, communicate, compute, and use printed and written materials related to varying contexts of daily life in the Eastern Tamang language. Literacy in the Eastern Tamang language involves enabling individual Eastern Tamang people to develop their academic and practical knowledge, skills, and potential in order to achieve their goals and to participate fully in their own and wider communities in Nepal.

The assessment aims to assess the performance proficiency of the Eastern Tamang people in terms of three core literacy skills – reading, numeracy, and writing skills. The skills to be assessed were chosen based on the national definition of literacy and the NFE policy as well as the content of the literacy classes run by the Eastern Tamang Language Team. The reading and numeracy skills encompass the following subskills:

1) precursor skills that are essential to becoming skillful readers;
2) oral numeracy and oral reading skills that are valuable diagnostic tools to assess how far the learners have progressed in the process of learning to read words and numbers or numeric systems;
3) silent reading skills and numeracy in decontextualised print, prose texts, and documents that are essential to function effectively in the work and everyday life of peoples in Nepal;

4) writing skills are also essential to communicate in daily life and dictation is the easiest way to measure individual's rudimentary writing skills.

Since no standards for adult literacy skill levels have been set for any language of Nepal, I have proposed a set of standards (Table 25) for reading, numeracy, and writing. I also proposed five skill levels and descriptions (Table 24) which can be applied not only to the Eastern Tamang people but also other indigenous language groups in Nepal, based on the BLC and the NAAL models.

The assessment designed shares the pragmatic principles of the SQC (Small, Quicker, and Cheaper) approach. However, I sought to develop a literacy assessment instrument to measure adult literacy performance proficiencies using an approach more like a standardized test rather than through household surveys. Thus, the assessment I designed is a little more complicated than the BLC model but much less sophisticated than the NAAL model. The reasons for this approach are as follows:

1) A desire to include sufficient psychometric components from recognized assessment models such as EGRA and EGMA to measure various basic literacy skills more validly and objectively;
2) A desire to develop a literacy assessment which can be feasibly implemented in the context of Nepal which is a developing country;
3) A wish to attract more official interest and attention from governmental and international institutions which have been involved actively in MLE programs in Nepal and which might be interested in developing a more standardized assessment for NFE programs in the indigenous languages of Nepal.

As mentioned in chapter 3, the development of a literacy assessment instrument should be done by the team or committee involved in initial design of the literacy

program plan. Even though I have worked as a literacy specialist for and with the Eastern Tamang people in Nepal for a considerable time, it was difficult for me to work alone on the development procedures, particularly away from Nepal. If there were more brain storming and discussion with diverse stakeholders of the Eastern Tamang literacy program as part of an assessment committee, the development process could be much more specific and practical and less time-consuming. And if more practical resources or items were available, such as various kinds and levels of documents and prose texts written in the Eastern Tamang language, creating new test items could be much easier and more authentic than the way I did through internet web search and asking friends in Nepal to send necessary materials for developing the assessment. Therefore, this assessment instrument has limitations at the moment and needs to be rendered more efficiently through consultation with local and national stakeholders in Nepal once I get back to Nepal.

I hope that more studies on developing adult literacy assessment, particularly in other indigenous languages of Nepal will follow my study so that standards for literacy as well as a process of doing systematic assessment can be integrated into a single system at the national level. If a standardized national literacy assessment instrument can be developed for cross-cultural language use in Nepal, many Nepalese adult learners in different mother tongue-based literacy programs will be able to more objectively identify their actual literacy skill level. Government educational agencies and/or employers would also have a clearer picture of a person's literacy skills when he or she applies for higher

schooling or a new job which requires certain levels of literacy. I hope that this study will be a significant contribution to that goal and a stimulus to various studies on literacy assessment in other indigenous languages of Nepal.

APPENDIX A

History of NFE/Literacy Practices in accordance with the National Development Plans (NDP) of Nepal*

1. Before the **National Development Plan** (NDP) [Source: Shrestha, 1977]

- 1951: The **Ministry of Educatio**n (MOE) was established.
- 1952: The **Education Board** (EB) was established.
- 1953: MOE, in cooperation with the United States Operation Mission (USOM), invited Dr. Frank Laubach to consult on adult education. He and three other educationists prepared a set of teaching materials: 5 alphabet charts according to his method, 1 primer containing 13 lessons, and a second reader in 4 parts with 25 lessons for each.
- 1954: An agreement between Nepal government and USOM was made to design and implement adult education in Nepal; **Teacher Training Center** was opened.
- 1955: The **Nepal National Education Planning Commission** (NNEPC) was established.

2. During the 1st NDP (1956-61)

1956 by NNEPC:

- Adult (age 16 and over) literacy as the second major target after primary schooling;
- Targets: Making literacy classes available to all who want them by 1975; 600 literacy classes per year; 300 teachers training based on the Laubach method; 100,000 new literates per year; other extensive adult education, village libraries and radio available for all by 1965; universal voluntary availability of complete adult education program;
- To introduce an experimental **illiteracy eradication campaign** in some villages;
- To develop adult education centers;

- Policy of language transfer (Nepali↬ L_1) [Source: Khadka et al., 2006];
- In September 1956, the **Bureau of Adult Education** as a branch of the College of Education began the six month-long adult literacy programs focusing on teaching the 3 Rs.
- Nine month-long NFE programs operated by the **District Education Office** (DEO);
- In July 1958, the **School-of–the Air Education** for adults was broadcasted from Radio Nepal.

3. During the 2nd NDP (1962-65)

1962 by the All Round National Education Committee (ARNEC):

- The ARNEC proposed Nepali as the medium of instruction in public schools. [Source: Khadka et al. 2006];
- Literacy education linked with agriculture was provided.
- The duration of NFE programs was reduced from 9 to 6 months.

4. During the 3rd NDP (1966-70)

By the National Education System Plan (NESP) 1970:

- To introduce two forms of NFE – general literacy focusing on the 3 Rs. and functional literacy programs stressing on thematic knowledge blended with 3 Rs. [Source: Khadka et al. 2006];
- The local political unit called Village/Municipality Panchayat was entrusted to conduct literacy classes.

5. During the 4th NDP (1970-75)

By the Education Act (EA) 2028 (August 1971):

- **Nepal National Literacy Program** – developed with US assistance [Source: Robinson-Pant, 2010];
- **Participatory/Dialogical learning approach** of Paulo Freire – propagated by UNESCO.

6. During the 5th NDP (1975-80)

In 1979, World Education begins its long relationship with the people and communities in Nepal by designing an integrated literacy program, which is now the basis for Nepal's National Literacy Campaign (World Education 1953-2003).

7. During the 6th NDP (1980-85)

The Education Act 3rd amendment 2037 in September, 1980; Nepali Act Amendment Act 2041 in November, 1984:

- Nurturing the thematic/dialogical/participatory approach by blending profession/occupation contents with literacy;
- **Primary Education Project** (PEP) – to provide assistance to about 700 primary schools in six out of 75 districts of Nepal with effective in-service teacher training systems with follow-up supervision, better school management and community support, better teaching materials, and improved physical facilities [World Bank, 1984].

8. During the 7th NDP (1985-90)

Judicial Administration Reform Act 2043 in November, 1986; the EA 4th amendment 2045 in October, 1988:

- Since 1985, **Literacy campaign approach** started in a very small scale [Source: Tuladhar, 1997];
- In 1990,
  - Needs-based literacy programs managed collaboratively by INGOs/NGOs, and Community-Based Organizations (CBOs);
  - Initiation of Government and NGO/CBO partnership for implementation of literacy programs;
  - **NFE Council** established within MoE;
  - The first **curriculum development workshop** organized by MoE based on UNESCO model [Source: Tuladhar, 1997].

9. During the 8th NDP (1992-97)

- Mother tongue education advocated by the **National Education Commission** (NEC);

- 3 main streams in education proposed by NEC

- PEP, **Basic and Primary Education Program** (BPEP), and **Technical Education and Vocational Training** (TEVT) [Source: Khadka, 2006];

- formal, non-formal, and technical and vocational education [Source: Tuladhar, 1997];

- **Curriculum Development Center** (CDC) developed primary school materials in 12 languages of ethnic minorities: Newari, Maithili, Tharu, Abhadhi, Limbu, Tamang, Bhojpuri, Magar, Rai Bantawa, Gurung, Sherpa, and Chamling;
- Literacy with additional contents such as health, cottage industry, environmental protection, and population subjects;
- The **National Language Policy Recommendation Commission** formed in 1993 suggested measures to design curriculum, prepare textbooks and introduce mother tongue as the medium of unilingual and transitional bilingual primary education and literacy programs [Source: Shrestha, 2004].
- In 1994, **NFE Resource Center** established within CERID [Source: Tuladhar, 1997].

10. During the 9th NDP (1997-2002)

- In 1999, the NEC and the Ninth Plan prescribed a policy to provide primary education in the mother tongue.
- In 2000, **Community literacy projects** conducted by World Education (WE), Nepal promoted multiple approaches such as experience-based approaches, Freirean/participatory approach, and individualized approach.
- **BPEP II** (1999-2004) – to establish 10,000 Early Childhood Development (ECD) Centers; to develop functional literacy and post-literacy programs with skill training components for adults [Source: Nepal National Commission for UNESCO, 2003].

11. During the 10th NDP (2002-2007)

The EA 7th amendment 2058 in Feb. 2002; the EA 8th amendment 2060 (Ordinance) in Jan. 2004:

- 2005 A **network of INGOs/NGOs and a database of literacy/NFE providers** – developed by CERID;
- **2007 NFE Policy** approved by Council of Ministers/Cabinet;
- **NFE Plan 2005-2009.**

12. Three Year Interim Plan (2007-2010) [Source: Ministry of Education of Nepal, 2007]

- To make all the citizens literate by ensuring access to all and to provide quality and employment-oriented education;
- To make everyone experience the feeling of free and equal quality education with easily accessible basic education;
- To develop higher education in line with research oriented and competitive human resource production;
- To make all levels of education equitable and inclusive.

13. During the 11 th NDP (2007-2012)

School Sector Reform Plan 2009-2015 in 2009:

- Early Childhood Development/Pre-primary education;
- Basic and Primary Education;
- Secondary Education;
- Technical Education and Vocational Training.

*The main source of this information is "A comprehensive review of the practices of literacy and nonformal education in Nepal" (Acharya, Sushan and Koirala, Bidya Nath. 2006. UNESCO Kathmandu Office). Other additional sources are specified in brackets.

APPENDIX B

MT-based adult literacy programs by ethnic organizations in Nepal

Ethnic Group	LIMBU	NEWAR	TAMANG	THARU
Program	Limbu MT Literacy /NFE Chotlung program	Tamsipakha literacy/NFE classes	Tamang literacy classes	Tharu literacy/NFE classes
Duration	9 months (initially); 6 months	Not identified	Not identified	Not identified
Location	Morang district	Maharjan community in Kathmandu	Makwanpur district	Dang district
Medium of instruction	Limbu language with own script Srijunga	Nepali and Newari in Devanagari script	Nepali and Tamang language in Devanagari script	Tharu language in Devanagari script
Teaching Method	Agaman Bidhi (Inductive method) - critical thinking through discussions using pictures	Code-switching bilingual approach; visiting a setting and reading signboards, captions, and directions	Code-switching bilingual approach; singing songs and discussions using pictures	Key word approach; analytical (problem posing/thematic) approach with discussions using posters; sharing experiences; games and role-plays
Teaching/Learning Materials	"Naya Goreto (Nepali primer)" (initially); "Chotlung"(Limbu primer in Srijunga script); songs written by participants	"Naya Goreto"; practical items	Primers – "Naya Goreto" and "Hoaishore" (based on Naya Goreto and translated into Tamang with inclusion of indigenous Tamang cultural contents); songs; pictures	Tharu primers – "Sosanse Shikshyaor" (3 volume set); "Muthlihai"; "Paschim ko Phool"; "Thalani" for a 3 month saving and credit program; songs
Other materials available	"*Mana Caita*" (A Picture of Human Beings) written by Dilli Lingdom; *Tanchhop* (a Limbu	Not identified	Not identified	*"Lirausi Byakaran"* (Tharu grammar written by Mahesh Chaudary); *Gurbaba* Dictionary edited by

	newspaper)			Ashok Tharu and Gopal Dahit; "Barki Maar" (reading material); Music cassettes; posters
Main Organizer	*Kirat Yakthung Chumlung*'central office and district committees	*Tamsipakha* CLC	*Tamang Ghedung Sangh*	BASE
Supporting organization	CIDA and UNESCO	World Education	Plan International	World Education and UNESCO

Source: Khadka et al. (2006)

APPENDIX C

MT-based adult literacy initiatives by individual national and/or expatriate literacy practitioners in cooperation with or without INGO/NGO(s)

Ethnic Group		1. GURUNG	2. KHALING	3. LIMBU	4. LOWA
Project Name		Eastern Gurung Literacy Project	Khaling Literacy Class	Limbu Transitional Literacy and Income Generation Project	Lowa Literacy Project
Duration		1991~1994	?~2005	January 2004-July 2010	2009~currunt
Medium of Instruction		Eastern Gurung	Khaling	Limbu	Lowa/Lhoba
Period of Each Course	Basic	4 months	6 months	7 months	5 months
	Advanced	6 months	None	6 months	5 months
	Transitional (L1→ Nepali)	Not identified	Done, but not identified	Not identified	5 months
Vocational/Health/ other Development Course		Health focused course for the women's literacy groups facilitated by the UMN Gorkha Project Community Health Department	None, but started a new health post staffed by Khaling people	Health, Culture, Agriculture, IGs etc.	None
Teaching Method		Top-down method (starting with songs, stories, etc. to teach sentences, words, and letters) + Whole language method (with Big Book)	Gudchinsky method (basically)	Multi-strategy method (word building track and story track)	Multi-Strategy Method
Name of Primer(s)		The Way to See	*Jennae Renae Cheysiki* (Let's learn to read and write) constructed by	- *Mangenna* (one) for word building track; big books, listening stories (35 series), and	Loket Dokyeki Dhep-1

Ethnic Group	1. GURUNG	2. KHALING	3. LIMBU	4. LOWA
		Nori Matsuura	experience stories for story track	
Teaching Materials for Teachers	Primer; a series of simple teaching plans for the lesson format at the front of the student booklets	Primer, teacher's guide in Khaling, and flash cards for letter	Primer, big book, news print, chalkboard, listening stories, posters, pictures, translated *Pipal Pustak* booklet series, teacher's handbook, flashcards, wall charts connected with the primer, teacher's guide	Primer, Big books, chalk-board, wall chart, news-print, and word cards
Learning Materials for Participants	Song charts; story booklets (read to the students by the teachers); a summary of the story in Multi-Strategy Method Story Track small booklet format	Exercise books, and later, a few story books	Primer, writing exercise books, discussion sheets, sign pens, story booklets, *Pipal Pustak*, *Chotlung* book, listening stories, big books, chalk board, news print, news papers, booklets, demonstration sheets	Primer, alphabet book, and student's Big book
Teacher's Training	One week at the beginning of the course, and one day per month during the 4 month program	Two times in Kathmandu (first at NNLPI, then at Administration Staff College in Jawalakhel); Third one in one of the Khaling villages.	Two times per year (basic teaching methodology for 2 weeks and follow-up training for 3 days in field areas); regular experience sharing and feedback programs.	Once a year – 10 days in the village
Facility of the Program	In a centre agreed by the community; sometimes a cow shed, sometimes a purpose built hut, and sometimes a public school room	The house of one of the participants	Local community learning center, local primary school, local people house	Local community club houses

Ethnic Group	1. GURUNG	2. KHALING	3. LIMBU	4. LOWA
Main organization			Limbu Language Development Association (LiLDA)	Himalayan Indigenous Society (HIS)-Nepal
Collaborating Organization	United Mission to Nepal (an INGO) and the local community	None	Language Development Center (LDC)-Nepal	Lo-Manthang Youth Clubs and Snow-Lion Youth Club in Upper Mustang area; LDC-Nepal
National Literacy Practitioner	Krishna Maya Gurung (with UMN)	Simon Khaling (with NNLPI); Maya Khaling	Dilendra Kumar Subba; Phulmaya Tumbapo; Harilal Tumrok ; Jivan Kumar Tumbapo; Tilman Sangbangphe; Ganga Prasad Lawati; Chop Lal Chemjong	Chhing Chhippa Lhomi; Shangbu Bhote (with HIS-Nepal); Puskar Poudel (Teacher trainer with LDC-Nepal)
Expatriate Literacy Practitioner	Jessie Glover (with SIL)	Ingrid Toba; Noriko Matsuura (with SIL)		Lori Marcuson (with SIL)

Ethnic Group		5. MAGAR	6. RAJBANSHI	7. SAMPANG	8. TAMANG-EASTERN
Project Name		Magar Literacy Pilot Project, Arkhala	Rajbanshi Adult Bilingual Literacy Program	Sampang Adult Bilingual Literacy Program	Tamang Literacy Classes
Duration		2004~2007	2006~current	2004~2009	Nov. 2008~current
Medium of Instruction		Magar	L1 in the basic course; Nepali in the transitional; Bilingual (L1 & Nepali) for the reading materials haling		Tamang/Tamangi in the basic course; bilingual (L1&Nepali) for the transitional course
Period of Each Course	Basic	5 months	7 months, including 1 month reading fluency class		7 months
	Advanced	3 months	None		5 weeks
	Transitional	5 months	Done, but not identified.		3 months

Ethnic Group	5. MAGAR	6. RAJBANSHI	7. SAMPANG	8. TAMANG-EASTERN
(L1→ Nepali)				
Vocational/Health/ other Development Course	a 10-day-long Small Business Ventures Workshop taught by Nantu Tamang	Health, social, and other development issues are included in discussions of the courses; special arrangement with other NGOs can be done on request.		None
Teaching Method	Multi-Strategy method (with primer track and story track)	Bottom up method - starting with teaching alphabet, syllables, and word building (using syllable box), then, sentence writing and comprehension; discussion questions on the comprehension of primer 2 as well as extra discussion topics and materials (time, measurement, name of month and day, letter writing, advance mathematics, story writing, etc.)		Key word approach for the basic and transitional courses; functional approach for the advanced one (teaching about vaccine, time, measurement, calendar, and writing a letter)
Name of Primer(s)	Magar Bat Rikke Pahake (Magar primer); Khas Kura Rikke Pahake (Transitional primer)	Rajbanshi primer 1 & 2 (L1); Transitional primer (Rajbanshi-Nepali)	Sampang primer 1 & 2 (L1); Transitioal primer (Sampang-Nepali)	Eastern Tamang Primer book 1 & 2 (L1); Advanced Arithmetic Workbook (Nepali); Bridging Course Primer (Nepali)
Teaching Materials for Teachers	Primer lessons (both in Magar and Nepali), Big books (both in Magar and Nepali), Magar listening stories, Nepali Pipal Pustak books as listening stories in the transitional classes, Magar numeracy book, fake bank notes to practice math, wall sheets for each Magar experience story	Primer with teacher guide attached on each page, chalkboard, flashcards, game cards, and games		Primer, teacher's guide, whiteboard
Learning Materials for Participants	Small versions of big books on A4 sheets (both	Primer, exercise books (writing & numeracy), discussion (attached		Primer, arithmetic

Ethnic Group	5. MAGAR	6. RAJBANSHI	7. SAMPANG	8. TAMANG-EASTERN
	in Magar and Nepali), Magar numeracy book, fake Nepali bank notes, Magar experience stories collected into two booklets, Magar story books (stage II), Magar alphabet book, Nepali primer, diglot books (about health issues); for the reading classes: Magar and Nepali Pipal Pustak Books, Nepali booklets on various topics published by World Education, easy Magar Bible story books, Magar New Testament	in primer), poster, stage 1 & 2 story books		workbook, copybook, story booklets,
Teacher's Training	Periodical consultations with the teacher once a month or once in two months and two short teacher training workshops for potential new teachers in the village.	Twice a year for MT part and once a year for bridging part in a place near language areas		Twice a year for the basic course; once a year for the bridging
Facility of the Program	The teacher's house	Local village committee will arrange the classroom, but most of the time the class is held in the teacher's home.		As local village committees arrange
Main organization		NNLPI – the Language Committee of and village committee		Eastern Tamang Language Team (ETLT)
Collaborating Organization	Literacy committee of the village			LDC-Nepal
National Literacy Practitioner	Pop Bahadur Soti Magar	Pamar Rajbanshi (with NNLPI)	Utra Rai (with NNLPI)	Milan Tamang; Madan Tamang; Dipesh Tamang; Janak Tamang;
Expatriate Literacy Practitioner	Andreas Csepe (with SIL)	May Wong (with SIL)		Young-Mee Kim (with SIL); May Wong (with SIL)

Ethnic Group		9. TAMANG-WESTERN	10. THARU	11.THULUNG	12. MT literature production
Project Name		Tamang Literacy Program	Tharu Transitional Literacy & Income Generation Project	Thulung Literacy Project	Mother Tongue Pipal Pustak project
Duration		1995-2000	Dec.2001~current	2002~current	October 2001~current
Medium of Instruction			Tharu and then Nepali	Thulung	Since 2005, producing original MT experience-oriented stories; In 20 different ethnic languages of Nepal: Dangaura Tharu, Darai, Dhimal, Eastern Tamang, Gurung, Jirel, Khaling, Limbu, Magar, Sherpa, Thami, Thulung, Kham Magar, Bahing, Maithili, Dumi, Newar, Bantawa, western Tamang, and Awadi
Period of Each Course	Basic	Lesson I: 3 months; Lesson II: 3 months; Lesson III: 4 months	8 months	This project is mainly for Thulung literature development: 5 calendars of different topics –health, culture, curriculum development, medical herb, MLE etc. Alphabet book Thulung School Text Book (G1-1, G1-2) Mother Care Hand book and Healthy Tooth (a poster) for the story track of Multistrategy method Thulung Reading Material series (level:1-4). There was a literacy initiative attempted by the Thulung Vision Center and the	
	Advanced		8 months		
	Transitional (L1→ Nepali)		8 months		
Vocational/Health/ other Development Course		Not identified	Three courses above include many topics like community development, income generation, health, family planning, agriculture, groups skills, etc.		
Teaching Method		Lets Learn to Read Tamang Language	A mix of a modified Whole Language Method (with Big Books) and Multi-Strategy method (with primer track and story track)		
Name of Primer(s)		Primer, Black board and chalk	Tharu & Nepali Word Building Book		
Teaching Materials for Teachers			Primer, Big books, small books, and lesson plans		
Learning Materials for Participants		Primer, writing exercise book, pencils, and eraser	Primer, Big books, small books, computer, radio, songs, and a Basic Tharu-Nepali Spelling Dictionary		
Teacher's Training		7 to 10 day workshop in a church hall	Facilitators of each course receive an initial training followed by a follow-up training about half way through the course.		

Ethnic Group	9. TAMANG-WESTERN	10. THARU	11.THULUNG	12. MT literature production
			Thulung Church Committee, but it did not sustain.	
Facility of the Program	Church hall in the village	Tharu NGO office for training and project community learning centers and rooms provided by the community for the NFE classes if there was no CLC	Thulung Vision Center	
Main organization		LDC-Nepal; Help Society (HS)-Nepal	Thulung Literature Development Center	SIL Nepal; United Mission to Nepal (UMN)
Collaborating Organization		Local NGOs, community support groups, local education office, government skills agencies, some SIL linguists and literacy specialists	Thulung Sama (NGO)	Various local NGOs, e.g., HIS Nepal, Kapan, Kathmandu, Prayatnashil Samudayik Samaj(Prahas Nepal), ETLT, and Sherpa Church
National Literacy Practitioner	Karna Bahadur Tamang			
Expatriate Literacy Practitioner	Mike Thomas, Norman Bell	Reg Naylor (with LDC-Nepal)	Kyoungrye Park (with SIL)	Jessie Glover (with SIL); Nori Matsuura (with SIL)

APPENDIX D

Non-Formal Education Center Policy 2063BS (2007AD)

(Approved by Council of Ministers/Cabinet on 25Magh 2063 BS)

Policy 1. Non-Formal Education will be expanded to provide the academic and practical knowledge, skills and information to different age and levels of learners.

Policy 2. NFE equivalent to FE will be provided to those who are deprived of educational opportunity or who dropped out of education.

Policy 3. Special provisions will be made to increase access to education.

Policy 4. Development and distribution of curricular and learning materials will gradually be decentralized and localized.

Policy 5. Community Learning Centres (CLCs) will be developed as the centre of educational activities to ensure equitable access to quality non-formal education for all.

Policy 6. The implementation of monitoring, supervision and evaluation of NFE programs will be decentralized.

Policy 7. Networking and coordination and partnership will be maintained with the agencies involved in NFE for resource generation and mobilization.

Policy 8. Inclusive education policy will be adopted to ensure access, quality and co-existence.

Policy 9. Common database will be developed and shared among the agencies involved in NFE programs.

Policy 10. Training, research, self monitoring and innovation will be included in NFE programs to build the capacity of the human resources involved in the NFE programs.

Policy 11. Government and non-government organizations and private agencies will be mobilized to meet the targets of 'Education for all.'

Policy 12. The financial management of non-formal education will be made compatible with the economic condition and policy of the government.

Policy 13. Local bodies will play the regulatory role for the management of non-formal education. Any of the modalities mainly from the following four will be applied to implement NFE programs.

Policy 14. NFEC will coordinate and collaborate with government, non-governmental, and international organizations to create cooperative environment among the agencies involved in NFE programs.

Policy 15. The literacy campaign will be developed as the main policy strategy for the eradication of illiteracy and local agencies will be made responsible for the program.

Policy 16. The agencies involved in NFE will develop their policies and strategies within the framework of the policies and strategies included in this policy document.

APPENDIX E

Eastern Tamang Working Orthography Chart (with IPA & Devanagri)

Consonants

	Lab.		Alv.		Retr.		Pal.		Vel.		Glot.	
vl. stop	p	प	t	त	ʈ	ट			k	क		
+asp.	Pʰ	फ	tʰ	थ	ʈʰ	ठ			kʰ	ख		
Voiced/ devoiced stop	b (p̬)	ब	d (t̬)	द	ɖ (ʈ̬)	ड			g (k̬)	ग		
Stop + breathy V.	bV̤	भ	dV̤	ध	ɖV̤	ढ			gV̤	घ		
vl. aff.							ʧ	च				
+asp.							ʧʰ	छ				
Voiced/ devoiced. affricate							ʤ (ʧ̬)	ज				
Affricate + breathy V.							ʤV̤	झ				
vl. fric.			s	स							h	ह
nas.	m	म	n	न					ŋ	ङ		
lat.			l	ल								

Flap			r	र								
approx.	w	व					j	य				

Conjuncts

- Half consonants occur followed by j य, w व, l ल, and in geminates pp प्प, ll ल्ल, nn न्न and ss स्स.
- Breathiness for sonorants: म्ह, न्ह, ङ्ह, ल्ह, ह्ल, य्ह,व्ह, and when breathiness is a dialect variation a voiced consonant is used with a dot underneath it ब़, द़, ड़, ज़, ग़, म़, ऱ, ल़, ऩ, ङ़. This means the reader either reads it as a voiced consonant followed by breathiness (lower tone) or no breathiness (higher tone).

Vowels

	Front				central				back			
High	i	इ / ि	i:	ई / ी					u	उ / ु	u:	ऊ / ू
Mid	e	ए / े	e:	एः / े:					o	ओ / ो	o:	ओ: / ो:
Low					a	अ	a:	आ/ा				
Glide	a i		ऐ / ै						o u		ओ / ौ	

APPENDIX F

Test items only for different literacy skill levels

I. For the Non-literate level (L0)

A. Precursor skills

1. Book & Print Awareness

1) Where do you find the title of this book? Please point to it.

2) Where do you find the table of contents in this book?

Please find and show it to me.

3) Please open to page X and show it to me.

4) Please find and point to a period (or stop marker) on that page.

5) Please find and point a question mark in that page.

2. Understanding and Interpretation of illustration

1) What do you see in the picture?

Please tell me what you see, pointing to each part of the picture as you do.

2) What is the mother/woman doing to the child/boy?

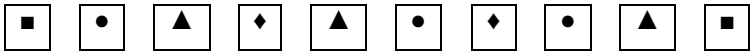
3) What do you think is the main message of this picture?

3. Discerning Shapes

1) Look at the set of shapes carefully and point to the shape which is different from the others.

2) Look at another set of shapes carefully and point to the shape which occurs more than once.

3) Here are ten cards. Each card has one shape on it. Look at the cards carefully, and then sort them into groups of identical objects.



4. Alphabet Knowledge

Practice item:	अ न ग

Test item		*Correct	Incorrect	Test item		Correct	Incorrect
1	उ			6	च		
2	ल			7	त		
3	स			8	ए		
4	इ			9	प		
5	ऊ			10	क		

5. Phonological awareness

Practice Item		
क	ी	
न	े	
स	ो	म

1) When ___ is blended with ____ (and ____), what sound does it become?

	Letters to be blended		
1	ग	ी	
2	ल	े	
3	च	ा	
4	र	ि	
5	भ	ु	
6	द	ो	
7	ङ	ा	इ
8	ज	ग	ु
9	स	ु	न
10	आ	फ	ै

2) Read words.

Practice items:	मी	रा	ताम

Test item	
11	नागा
12	सिङ
13	आले
14	मोजे
15	कराइ
16	चजा
17	टाङगा

B. Oral Numeracy

1. Oral Counting Fluency - Please count out loud from 5 to 25.

2. Number Identification

Please point to each number with your finger and say to me what the number is. Please move your finger from top to bottom of each column.

1	৫	9	৩৯ ‘thirty nine’
2	৮	10	৫৬ ‘fifty-six’
3	৬	11	৭৫ ‘seventy-five’
4	১৫	12	৬৭ ‘sixty-seven’
5	১	13	৮৪ ‘eighty-four’
6	৩০	14	৯১ ‘ninety-one’
7	২২ ‘twenty-two’	15	১০০ ‘one hundred’
8	৪৩ ‘forty-three’		

II. For the Below Basic level (L1)

A. Precursor skills

1. Book & Print Awareness

1) Where do you find the title of this book? Please point to it.

2) Where do you find the table of contents in this book?

Please find and show it to me.

3) Please open to page X and show it to me.

4) Please find and point to a period (or stop marker) on that page.

5) Please find and point a question mark in that page.

2. Understanding and Interpretation of illustration

1) What do you see in the picture? Please tell me what you see, pointing to each

part of the picture as you do.

2) What is the mother/woman doing to the child/boy?

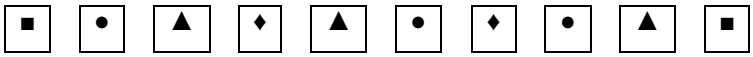
3) What do you think is the main message of this picture?

3. Discerning Shapes

1) Look at the set of shapes carefully and point to the shape which is different from the others.

2) Look at another set of shapes carefully and point to the shape which occurs more than once.

3) Here are ten cards. Each card has one shape on it. Look at the cards carefully, and then sort them into groups of identical objects.



4. Alphabet Knowledge

Practice item:	अ न ग

Test item		*Correct	Incorrect	Test item		Correct	Incorrect
1	उ			6	च		
2	ल			7	त		
3	स			8	ए		
4	इ			9	प		
5	ङ			10	क		

5. Phonological awareness

Practice Item		
क	ी	
न	े	
स	ो	म

1) When ___ is blended with ____ (and ____), what sound does it become?

	Letters to be blended		
1	ग	ी	
2	ल	े	
3	च	ा	
4	र	ि	
5	भ	ु	
6	द	ो	
7	ङ	ा	इ
8	ज	ग	ु
9	स	ु	न
10	आ	फ	ै

2) Read words.

Practice items:	मी	रा	ताम

Test item	
11	नागा
12	सिङ
13	आले
14	मोजे
15	कराइ
16	चजा
17	टाङगा

B. Oral Numeracy

1. Oral Counting Fluency - Please count out loud from 5 to 25.

2. Number Identification

Please point to each number with your finger and say to me what the number is. Please move your finger from top to bottom of each column.

1	५	9	३९
2	८	10	५६
3	६	11	७५
4	१५	12	६७
5	१	13	८४
6	३०	14	९१
7	२२	15	१००
8	४३		

C. Oral Reading

1. Word Recognition

1) What is this in the picture? Choose a right word for the object and read it aloud.

Practice items:	1) a picture of a tree = दोङ
	2) a picture of bananas = मोजे
	3) a picture of a dog = नगी

Test items:

	Picture of	Word
1	a crow	न्हो
2	a corn	ठेगा
3	a toilet	कावा
4	a bamboo basket	क्युइ
5	a wooden jug for yogurt	मकै
6	the sun	जुम्बी
7	water	ध्रिनी
8	finger(s)	पुख्री
9	garlic	छाङ
10	a snake	चर्पी

2. Word Accuracy

Look at the words presented here carefully and read aloud as many words as you can.

Practice items:	दिम लबु चजा

Test items:

	Words		Words
1	कोला	9	'nutritious'
2	मार	10	'to develop'
3	ऐना	11	'disease'
4	उमाल	12	'landslides'
5	ग्वाई	13	'problem'
6	नाम्सा	14	'culture'
7	थुङ्बा	15	'independent'
8	होच्छेलमा		

III. For the Basic level (L2)

A. Oral Numeracy

1. Oral Counting Fluency - Please count out loud from 5 to 25.

2. Number Identification

Please point to each number with your finger and say to me what the number is. Please move your finger from top to bottom of each column.

1	५	9	३९
2	८	10	५६
3	६	11	७५
4	१५	12	६७
5	१	13	८४
6	३०	14	९१
7	२२	15	१००
8	४३		

3. Applied Numeracy

1) Look at the watch. What time is it now?

Item #	Time on the watch
1	8:00
2	3:10
3	12:15
4	5:30
5	9:45

2) How much is it worth? Tell me the value of each coin or bill.

Item #	Money
6	A coin of 1 rupee
7	A coin of 10 rupees
8	A note of 20 rupees
9	A note of 5 rupees
10	A note of 50 rupees
11	A note of 1 rupee
12	A note of 100 rupees

*Look at the date I point to on the calendar and answer questions.

3) What date is it?

Item #	Date (mm/dd) pointed*	
13	चैत १६ गते	(March 30th)
14	असोज २५ गते	(October 12th)
15	साउन ३२ गते	(August 17th)

4) What day is it?

Item #	Test item	Answer	Correct	Incorrect
16	What day is पुस १७ गते (Jan. 1st)?	शनिबार 'Friday'		
17	What day is माघ ३ गते (Jan.17th)?	सोमबार 'Monday'		

B. Oral Reading

1. Word Recognition

1) What is this in the picture? Choose a right word for the object and read it aloud.

Practice items:	1) a picture of a tree = दोङ
	2) a picture of bananas = मोजे
	3) a picture of a dog = नगी

Test items:

	Picture of	Word
1	a crow	न्हो
2	a corn	ठेगा
3	a toilet	कावा
4	a bamboo basket	क्युइ
5	a wooden jug for yogurt	मकै
6	the sun	जुम्बी
7	water	ध्रिनी
8	finger(s)	पुख्री
9	garlic	छाङ
10	a snake	चर्पी

2. Word Accuracy

Look at the words presented here carefully and read aloud as many words as you can.

Practice items:	दिम	लबु	चजा

Test items:

	Words		Words
1	कोला	9	'nutritious'
2	मार	10	'to develop'
3	ऐना	11	'disease'
4	उमाल	12	'landslides'
5	ग्वाई	13	'problem'
6	नाम्सा	14	'culture'
7	थुङ्बा	15	'independent'
8	होच्छेलमा		

3. Oral Passage reading-Accuracy, Fluency, and Comprehension

*Please read as fast and accurately as you can.

Nepal, My Country [3]

Laso ('Hello')! My name is Chaangbaa. I was born and live in Nepal. Nepal, my country, is a beautiful and peaceful country. [24]

In Nepal, there are many high mountains called "Himalayas". Himalayas mean "the house of snow". Every year, many foreigners come to Nepal to see those mountains with snow all year. [54]

There are lots of hills and lowlands in Nepal too. There live many different tribal peoples and they speak different languages. Nepali is the national language of my country. I speak Tamang language with my family and Tamang people. But I have to communicate with other people in Nepali. [103]

Most people in Nepal do farming. We raise corn, millet, wheat, and beans in the fields of the hill areas and rice in the lowland areas. We raise chickens, goats, and buffalos too. We can get some fish only from rivers or lakes because Nepal has no sea around it. My country is surrounded by Tibet in the north and by India in the east, west, and south. [171]

There are dry and rainy seasons in Nepal. In the dry season, we can enjoy clear skies and beautiful weather for several months. I like my country and my children also love to live in this country. Why don't you come and visit my country and my family someday? [220]

*Listen carefully and answer the questions as best as you can.

1	What is the name of the person talking in the story?
2	What does Himalayas mean?
3	What language does Chaangbaa speak with his family?
4	What is it that Nepal does not have according to Chaangbaa's geographical description of Nepal?
5	How do you know whether Chaangbaa is a child or an adult?

C. Silent Reading

1. Word Recognition

☺ When the letters in the brackets ([ ]) are combined in that order, what word is made? Please circle the right word.

1) [थ] + [ा] + [ब] + [ा] = ?

① थवा ② थावा ③ याबा ④ थाबा

2) [प] + [र] + [ि] + [व] + [ा] + [र] = ?

① परवर ② परिबर ③ परिवार ④ प्रविर

☺ Please look at the pictures below. Find and circle the word which is the name of the object pictured.

3) ① झाङ ② दोङ ③ छाङ ④ काङ

4) ① sun ② flag ③ moon ④ mountain

2. Comprehension of a prose text

☺ Please read the following story in the box silently. When you have finished reading the story, read and answer the questions. Please circle the best answer to each question.

A Heavy Rain

In a small village of Kavre District in Nepal, there lived a boy named Man Bahadur Lama. In the summer that he became nine years old, there came a heavy rain one day. It destroyed many things. His house was damaged seriously and his family's fields were lost by landslides. Mud and rocks filled the fields and roads around his village.

However, villagers came to work together to restore the damaged fields and roads. They also helped Man's family rebuild their house and cultivate the damaged fields. Whenever it rains heavily, Man remembers the generous help of villagers as well as the pain of the loss at that time.

1) Who is this story about?

① Chaangba Lama ② Bam Bahadur Lama
③ Man Bahadur Lama ④ Madan Lama

2) What is the major event this story tells us about?

① an earthquake ② a heavy rain
③ a big fire ④ a severe drought

3) What did the family do after they lost their house and fields?

① They moved out of the village and settled in Kathmandu.

② They bought a new house and new fields in the village.

③ They had to work for other rich neighbors in another village.

④ They restored their house and fields again with the help of villagers.

3. Comprehension of a document

☺ Please look at the information from a brochure below. Then, read the questions carefully and answer them. Circle the best answer to each question.

How to Raise Potatoes

Tools and Supplies:

Hoe, rake, spading fork, knife, seed potato, fertilizer, water, tray

Steps to follow:

1. Preparing the soil
   - Clearing the land
   - Loosening the soil
   - Digging the holes (3-5 inches deep)

2. Preparing the potatoes
   - Cutting into pieces with at least one eye on each planting portion
   - Sprouting the eyes, laying the pieces on flat trays in a sunny, airy place for several weeks

3. Planting the potatoes
   - Inserting a small segment of the sprouted seed potato in previously dug holes apart 12 inches
   -Covering the potatoes with sufficient loose soil
   -Giving the potatoes a boost with water and fertilizer

4. Maintaining the plants
   - Weeding the plants
   - Fertilizing the plants
   - Controlling insects
   - Watering when necessary

5. Harvesting the potatoes
- Determining correct time of harvest (when the vines completely died down; dig and check the size of potatoes)
- Removing potatoes from the ground
- Storing the potatoes for extended use in a cool, dark place with plenty of air

✶**Warning**: Potatoes that have been dug up should not be exposed to the sun any longer than is necessary to remove dirt.

1) What is the brochure about?

① How to raise potatoes ② How to raise sweet potatoes

③ How to raise radishes ④ How to raise carrots

2) To sprout the eyes of potato, where do you need to place the pieces?

① in a cool, dark place ② in a cold, windy place
③ in a sunny, airy place ④ in a dry, dark place

3) To plant the potatoes, how deeply do you need to dig the holes?

① 4 inches ② 6 inches ③ 9 inches ④ 12 inches

D. Numeracy

1. Quantity Discrimination

☺ Please look at each pair of two numbers below. Which one is greater? Circle the greater number.

1)	६	९
2)	१८	१५
3)	११०	१०१

4) Mina runs a vegetable shop. She sold 27 kilograms of potatoes, 34 kilograms of onions, 40 kilograms of tomatoes, and 19 kilograms of radishes today. Which vegetable did she sell the most of?

①onions ② potatoes ③ radishes ④ tomatoes

2. Identifying Missing Numbers

☺ Look at the numbers in different sets. In each set, one number is missing. What number should go in each space? Please write the right number in the space.

1	_____, १८, १९, २०, २१
2	_____, ३९, ३८, ३७, _____, ३५
3	६०, _____, ८०, ९०, १००

3. Applied Numeracy

☺ Please look at the examples each clock carefully and write the correct time in the space.

For example:

1) 9 o'clock

2) **6:10** 6 o'clock and 10 minutes

1)

2)

3) **4:15**

_____ _____ _____

☺ Please look at each picture of different bills and write in words how much it is worth in the space.

For example: पांच रुपैयाँ

4) _____ रुपैयाँ

5) _____ रुपैयाँ

☺ Please read each question carefully and refer to the calendar below to find an answer for each question. Circle the right date or day under each question.

२०६७ चैत्र			March – April 2011			
आइतबार Sun	सोमबार Mon	मंगलबार Tues	बुधबार Wed	बिहीबार Thu	शुक्बार Fri	शनिबार Sat
		०१ 15	०२ 16	०३ 17	०४ 18	०५ 19 पहाडि क्षेत्रमा फागु
०६ 20 तरई क्षेत्रमा फागु	०७ 21	०८ 22	०९ 23	१० 24	११ 25	१२ 26 ☐
१३ 27	१४ 28	१५ 29	१६ 30	१७ 31	१८ 1	१९ 2
२० 3 घोडे जात्रा	२१ 4	२२ 5	२३ 6	२४ 7	२५ 8	२६ 9
२७ 10	२८ 11 ☐	२९ 12 श्री राम नवमी	३० 13	बैशाख १ नयाँ वष २०६८ सुरु		

6) What is the date of the first Wednesday of चैत्र?

① १ गते ② २ गते ③ ६ गते ④ ११ गते

7) In this month of चैत्र, how many official holidays are there?

① ४ दिन ② ५ दिन ③ ६ दिन ④ ७ दिन

8) What day is the last day of चैत्र?

① मंगलबार ② बुधबार ③ बिहिबार ④ शनिबार

4. Computing skills

☺ Please look at each problem carefully and write the correct answer in each box.

1) ८ + ३ = ☐

2) १४ + २९ = ☐

3) १० - ४ = ☐

4) ४७ - ८ = ☐

5) ६ x ५ = ☐

6) ९ x ९ = ☐

7) ३५ ÷ ५ = ☐

8) ७२ ÷ ८ = ☐

5. Numerical Questions in prose text

☺ Please read the passage and questions related to it carefully. Circle the best answer to each question

Madan raises six goats, eleven chickens, and three buffaloes at home. Tomorrow, he is going to sell three chickens and two goats to one of his neighbors. Then, he is going to buy a cow to get some milk for his family.

1) How many kinds of livestock does Madan raise at home?

① २ ② ३ ③ ४ ④ ६

2) When Madan sells the three chickens to his neighbor, how many chickens will he have left?

① ४ ② ६ ③ ८ ④ १

3) After selling three chickens and two goats to his neighbor, how many livestock altogether will he still have?

① १५ ② १६ ③ १७ ④ १८

6. Computing skills in a document

☺ Please read the document and questions related to it carefully. Circle the best answer to each question.

List of School Supplies to purchase				
ITEM		QUANTITY	UNIT PRICE	COST
1	notebook	7	5	
2	pencil	3 boxes	10	
3	pen	2 boxes	10	
4	eraser	5	3	
5				
			TOTAL COST:	

1) How much will be the cost of the pens?

① 15 rupees ② 20 rupees ③ 25 rupees ④ 30 rupees

2) What will be the difference between the cost of the pencils and the cost of the erasers?

① 15 rupees ② 20 rupees ③ 25 rupees ④ 30 rupees

3) What will be the total value of the purchases?

① 100rupees ② 85 rupees ③ 65 rupees ④ 45 rupees

E. Writing: Dictation

Your Full Name:_____

1. _____ 'hand'

2. _____ 'book'

3. _____ 'healthy'

4. _____ 'to write'

5. _____ 'to plant a tree' (purpose)

6. _____ 'What time is it?'

7. _____ 'Can you read in Tamang language?

IV. For the Intermediate level (L3)

A. Oral Passage reading-Accuracy, Fluency, and Comprehension

*Please read as fast and accurately as you can.

Nepal, My Country

Laso ('Hello')! My name is Chaangbaa. I was born and live in Nepal. Nepal, my country, is a beautiful and peaceful country.

In Nepal, there are many high mountains called "Himalayas". Himalayas mean "the house of snow". Every year, many foreigners come to Nepal to see those mountains with snow all year.

There are lots of hills and lowlands in Nepal too. There live many

different tribal peoples and they speak different languages. Nepali is the national language of my country. I speak Tamang language with my family and Tamang people. But I have to communicate with other people in Nepali.

Most people in Nepal do farming. We raise corn, millet, wheat, and beans in the fields of the hill areas and rice in the lowland areas. We raise chickens, goats, and buffalos too. We can get some fish only from rivers or lakes because Nepal has no sea around it. My country is surrounded by Tibet in the north and by India in the east, west, and south.

There are dry and rainy seasons in Nepal. In the dry season, we can enjoy clear skies and beautiful weather for several months. I like my country and my children also love to live in this country. Why don't you come and visit my country and my family someday?

*Listen carefully and answer the questions as best as you can.

1	What is the name of the person talking in the story?
2	What does Himalayas mean?
3	What language does Chaangbaa speak with his family?
4	What is it that Nepal does not have according to Chaangbaa's geographical description of Nepal?
5	How do you know whether Chaangbaa is a child or an adult?

B. Silent Reading

1. Comprehension and Critical Thinking of a prose text

☺ Please read the following article in the box silently. When you have finished reading the story, read the questions and answer them. Please circle the best answer to each question.

Mothers' bid for model village

HIMALAYAN NEWS SERVICE Added At: 2011-04-06 11:32 PM

DIKTEL: It seems that women of Martim Village Development Committee, Khotang are all braced to make their village a model village. After realizing the need for drastic overhaul in their way of life, the women here formed Sayapatri Mothers' Group two years ago.

In the first phase, they launched a toilet construction campaign. According to Chandrakala Dhakal, chairperson of the group, the toilets are being built with funds from locals.

"As the villagers are frequently afflicted by diarrhoea and in need of toilets in their houses, we chose this as our first move," she said.

The group has also declared the village an alcohol and gambling-free zone. The group has also added four beds at the local sub-health post. It also initiated production of incense sticks to generate income.

At the beginning of every month, the group holds discussions on sanitation and different issues of the village and on the basis of this, they make plans.

According to Shiva Dhakal, a local, the group's campaigns have successfully effected huge changes in the village. "Now people trust them more than us (men)," he said.

1) What is this article about?

① A feminist movement ② A community development initiative

③ A health campaign ④ An income generation program

2) Which of the following is NOT one of the issues of Martim village?

① Sanitation ② Drinking alcohol ③ Lack of trust of men ④ Gambling

3) Which of the following statement is NOT true in this account?

① Toilets are being built with external funds.

② Villagers began to make incense sticks to sell.

③ There were a lot of positive changes in the village.

④ Villagers discuss on and make plans together for various issues.

2. Comprehension of a document

Please read the document in the box below. When you finish reading it silently, answer the questions. Circle the best answer to each question.

**********Rehydration Information**********

Provided by: Sipali Community Healthcare committee
Date: February 13, 2011

REHYDRATION DRINKS
If commercial rehydration drinks are unavailable the following drinks may be used:

1. FOR FLUID REPLACEMENT DURING AND AFTER HIGH FEVER, DIARRHEA, AND/OR VOMITING –
• Infants – breast milk
• Infants and children under 12 years – rice cereal formula
• Children over 12 and adults – homemade oral rehydration therapy (ORT) or oral rehydration solution (ORS)

1) For Rice Cereal Formula
- 6 glasses of clean water
- 1 cup cooked rice
- 1/2 level teaspoon salt

2) For Oral Rehydration Therapy (ORT)
- 6 glasses of clean water
- 1 scant teaspoon salt
- 3 and half tablespoons of sugar
- 1/3 teaspoon baking soda

3) For Oral Rehydration Solution (ORS)
- 6 glasses of water
- 1 level teaspoon salt
- 8 level teaspoons sugar

2. FOR FLUID REPLACEMENT DURING AND AFTER HEAVY SWEATING –
Homemade Sports Drink
- 1 cup of powdered fruit juice (sugar included)
- 3/4 teaspoon salt
- 12 glasses of clean water

★ How to BOIL, KEEP, and SERVE rehydration drinks:
1) When you boil water before mixing anything, you should boil it for 15 minutes once it starts boiling. Then, boil five more minutes after putting salt or sugar in it.
2) Cool the water and keep it in a clean container or bottle with a lid.
3) Serve the ill or weak person with the homemade rehydration drink as often as possible – at least 6 times per day.

****

1) Who is providing this information?

① a school ② a village clinic
③ a healthcare committee ④ a VDC

2) Who does NOT need this information? [Answer: ②]

① a person who has high fever ② a person who has a cut on his foot
③ a person who has sweated a lot ④ a person who has diarrhea and vomiting

3) When a 13–year old boy has high fever and diarrhea, what is the best his mother can prepare for him?

① clean water ② rice cereal formula
③ boiled milk ④ oral rehydration solution

C. Numeracy

1. Quantity Discrimination

☺ Please look at each pair of two numbers below. Which one is greater? Circle the greater number.

1)	५७	६९
2)	१८४	१९२
3)	२०६	३०१

4) Ram can carry 53 kilograms of things at the most. Man can carry 46 kilograms and Dorje 70 kilograms. Buddha can carry 65 kilograms. Who can carry the least?

① Buddha ② Dorje ③ Man ④ Ram

2. Identifying Missing Numbers

☺ Look at the numbers in different sets. In each set, one number is missing. What number should go in each space? Please write the right number in the space.

1	____, ५४, ५६, ५८, ६०
2	____, ९३, ९२, ९१, ९०, ____
3	२१०, _____, २२०, २२५, २३०

3. Applied Numeracy

☺ Please look at the examples each clock carefully and write the correct time in the space.

For example:

1) 9 o'clock

2) **6:10** 6 o'clock and 10 minutes

1)

2)

3) **6:00**

_____ _____ _____

☺ Please look at each picture of different bills and write in words how much it is worth in the space.

For example: <u>पांच</u> रुपैयाँ

4) _____ रुपैयाँ

5)

_____ रुपैयाँ

☺ Please read each question carefully and refer to the calendar below to find an answer for each question. Circle the right date or day under each question.

२०६७ चैत्र			March – April 2011			
आइतबार Sun	सोमबार Mon	मंगलबार Tues	बुधबार Wed	बिहीबार Thu	शुक्रबार Fri	शनिबार Sat
		०१ 15	०२ 16	०३ 17	०४ 18	०५ 19 पहाडि क्षेत्रमा फागु
०६ 20 तरई क्षेत्रमा फागु	०७ 21	०८ 22	०९ 23	१० 24	११ 25	१२ 26 ☐
१३ 27	१४ 28	१५ 29	१६ 30	१७ 31	१८ 1	१९ 2
२० 3 घोडे जात्रा	२१ 4	२२ 5	२३ 6	२४ 7	२५ 8	२६ 9

२७ 10	२८ 11 □	२९ 12 श्री राम नवमी	३० 13	बैशाख १ नयाँ वष २०६८ सुरु		

6) What is the date of the third Thirsday of चैत्र?

① ३ गते ② ९ गते ③ १७ गते ④ २५ गते

7) What is the corresponding date of चैत्र ५ गते?

① March 15 तारिक ② March 19 तारिक
③ March 21 तारिक ④ March 26 तारिक

8) What day is it when the new year 2068 BS begins?]

① आइतबार ② मंगलबार ③ बिहिबार ④ शनिबार

4. Computing skills

☺ Please look at each problem carefully and write the correct answer in each box.

1) ३८ + ५३ = □ 2) ४४ + ६९ = □ 3) २२ - १४ = □ 4) ९७ - ७९ = □

5) १० x ५ = □ 6) २५ x ८ = □ 7) ७० ÷ ७ = □ 8) २४० ÷ १० = □

5. Numerical Questions in prose text

☺ Please read the passage and questions related to it carefully. Circle the best answer to each question

Basun is attending a literacy class in her village. Basun is a 35-year old women married to Deepak, her husband, who is 38 years old. Basun has been happily married for 18 years. Basun and Deepak have five children – Two sons and three daughters.

Their eldest son, Ram, is 17 years old, and second son, Man, 15 years old. Their eldest daughter, Mina, just turned 13 years old last week and second one is 11 years old. Their youngest daughter is going to be 10 years old next week.

Next month, her eldest son is going to marry to a beautiful girl the same age as him. Basun is going to have a bigger family sooner or later.

1) What is the difference between Basun's and Mina's ages?

① ११ ② १२ ③ १३ ④ १५

2) What is the difference between Deepak's age and his youngest child's age?

① २९ ② २७ ③ १८ ④ १७

3) What is the total sum of ages of Maya's children? Write the number of sum in the space.

Total _____ years

6. Computing skills in a document

☺ Please read the document and questions related to it carefully. Circle the best answer to each question.

Today's Weather Records			
Stations	Max. temp. (ºC)	Min. temp (ºC)	24 hrs Rainfall (mm)#
Dadeldhura	21.7	7.0	0.0
Dipayal	31.7	10.7	0.0
Dhangadi	34.1	14.7	0.0
Birendranagar	31.6	13.0	NA
Nepalgunj	33.8	16.0	0.0
Jumla	17.4	2.5	5.7
Pokhara	29.9	15.4	0.0
Bhairahawa	34.8	18.9	Tr.0
Simra	29.7	18.5	0.0
Kathmandu	27.6	11.0	0.7
Taplejung	18.6	9.2	8.2
Dhankuta	21.0	12.6	3.6
Biratnagar	25.4	16.4	29.2
Jiri	19.0	5.5	2.1*
Jomsom	16.2	-1.5	Tr.0*
Dharan	26.8	17.0	4.5*

1) What is the difference between maximum temperature and minimum temperature in Kathmandu today?

① 0.7 ˚C ② 11.0 ˚C ③ 16.0 ˚C ④ 16. 6 ˚C

2) What is the difference between the maximum temperature of Biratnagar and that of Jumla? Write the temperature difference in numbers in the space below.

_____ ˚C

3) What is the difference between the greatest amount and the second greatest amount of rainfall today?

_____ mm

E. Writing: Dictation

Your Full Name: _____

1. _____ ‘committee’

2. _____ ‘to develop’ (verb)

3. _____ ‘education’

4. _____ ‘because of bad habits’

5. _____ ‘to build a toilet’ (purpose)

6. _____

‘People in Nepal love the color red and sweet milk tea.’

7. _____

‘Do you see lice in others’ hair while you do not feel a buffalo walking on your back?’

V. For the Advanced level (L4)

A. Oral Passage reading-Accuracy, Fluency, and Comprehension

*Please read as fast and accurately as you can.

Nepal, My Country

Laso (‘Hello’)! My name is Chaangbaa. I was born and live in Nepal. Nepal, my country, is a beautiful and peaceful country.

In Nepal, there are many high mountains called “Himalayas”. Himalayas mean “the house of snow”. Every year, many foreigners come to Nepal to see those mountains with snow all year.

There are lots of hills and lowlands in Nepal too. There live many

different tribal peoples and they speak different languages. Nepali is the national language of my country. I speak Tamang language with my family and Tamang people. But I have to communicate with other people in Nepali.

Most people in Nepal do farming. We raise corn, millet, wheat, and beans in the fields of the hill areas and rice in the lowland areas. We raise chickens, goats, and buffalos too. We can get some fish only from rivers or lakes because Nepal has no sea around it. My country is surrounded by Tibet in the north and by India in the east, west, and south.

There are dry and rainy seasons in Nepal. In the dry season, we can enjoy clear skies and beautiful weather for several months. I like my country and my children also love to live in this country. Why don't you come and visit my country and my family someday?

*Listen carefully and answer the questions as best as you can.

1	What is the name of the person talking in the story?
2	What does Himalayas mean?
3	What language does Chaangbaa speak with his family?
4	What is it that Nepal does not have according to Chaangbaa's geographical description of Nepal?
5	How do you know whether Chaangbaa is a child or an adult?

B. Silent Reading

1. Comprehension and Critical Thinking of a prose text

☺ Please read the following story in the box silently. When you have finished reading the story, read and answer the questions. Please circle the best answer to each question.

Father's Chest

Once there lived an old man with his two big sons both married. The sons were well mannered and devoted to the service of their aged father. Although the father and his two sons were peasants by profession, they owned lots of land and a nice cozy house, big enough to keep themselves quite comfortably. The old man, the head of the family was running the family affairs fairly. Everybody in the family was happy and quite relaxed.

As time passed on, the old man became even older and his sons also became the fathers of several children. One day, the old man called his sons and told them, "I want you to take the family responsibilities from me and take good care of the family affairs from now on." He divided all the property into two equal halves as inheritances for his two sons. His sons appreciated his decision.

Now the joint family was split into two different families. The house was also duly portioned leaving only a small room for the old man to live privately as he wanted. Regarding the responsibility of taking care of the retired family chief, an agreement was signed according to which it would require his sons to look after their aged father for one full month at a time in turns.

As agreed upon, he was fairly well looked after by his sons for the first few months. But very soon the old man found himself neglected and became quite lonely. His sons were no longer interested in him as they had everything they could get from him already. Life became more and more miserable for him to bear. He repented on leaving nothing for himself for his [ ] days.

The situation grew so worse that his sons did not even hesitate to give their aged father the worst meal fit only for animals. He, however, accepted the meal they gave, but never ate it and preferred to stay hungry. One day, he visited his family priest who had always been a well-wisher and nice advisor to him. He explained all about his grief to him. After a little thoughtful pause, the priest uttered a few words to the old man who immediately looked very delighted with his advice. Soon the old man came back home and stored something very quickly in his little chest which he always kept in his bed room and locked very heavily. Since then, he started to guard it almost round the clock.

Soon the chest became a subject of great curiosity to everyone in the family. Whenever his sons inquired about the content in the chest, he answered, "A few valuables of my last assets. I would like you to share this last treasure between you two brothers equally after my death." The two sons started dreaming of another untold treasure that they would soon inherit and also of their very bright and luxurious future. Good days came back to the old man once more. The old man enjoyed the good food and all the family hours he deserved until he finally died.

After his death, his two sons hastily opened their father's chest. But to their great disappointment, they could see nothing but a few pieces of heavy rocks and other junks. At last, they realized their father's wisdom and repented for all the mistreatment of their father.

1) Which one is the best set of attributes for describing the old man and the two sons in this story?

① stingy – curious ② greedy - stingy ③ secretive - fearless
④ wise - greedy ⑤ sincere - generous

2) Which one is the most appropriate word to fit into the bracket of the underlined phrase?

① happy ② bright ③ rainy ④ rich ⑤ worthless

3) What is the best lesson we can learn from this story?

① We need to eat well every day.
② We need to save money before we retire.
③ We need to take care of our parents faithfully.
④ We need to find treasures for our bright future.
⑤ We need to plan well for our retirement.

2. Comprehension of a document

☺ Please look at the table of transportation schedules and fares below. When you have finished reading it silently, read and answer the questions. Circle the best answer to each question.

TIME & FARE TABLE OF TRANSPORTATION – From KATHMANDU				
Destination	Departure Time AM: in the morning; PM: in the afternoon/ evening	Fare (in Rupees)		
		Child (age 1-6)	Student (with ID)	Adult
Bharatpur	From 6:00 AM, every 1 hour till 5:00 PM	20	50% of Adult fares	60
Dharan	From 6:00 AM, every 1 hour till 4:00 PM	20		70
Dhulikhel	From 5:00 AM, every 15 minute till 8:00 PM	5		20
Dolakha	From 6:00 AM, every 30 minute till 5:00 PM	10		50
Janakpur	From 6:00 AM, every 1 hour till 4:00 PM	20		60
Itahari	From 6:00 AM, every 1 hour till 4:00 PM	20		60
Mahendranagar	From 5:00 AM, every 2 hour till 3:00 PM	30		80

Nepalganj	From 6:00 AM, every 30 minute till 6:00 PM	20		70
Okhaldhunga	From 5:00 AM, every 30 minute till 5:00 PM	15		60
Rasuwa	From 5:00 AM, every 30 minute till 5:00 PM	15		60

1) Shanti wants to go to Dhulikhel to see the morning scenery of "Himal" from there. She usually gets up at 5:00 o'clock in the morning. She wants to get on the third bus leaving for Dhulikhel on that day. What time will her bus depart?

① 5:00 AM ② 5:15 AM ③ 5:30 AM ④ 5:45 AM ⑤ 6:00 AM

2) Ram is a secondary school student. He is going to Nepalganj for holidays with his best friend. How much bus fare do they have to pay in total?

① 35 rupees ② 50 rupees ③ 70 rupees ④ 80 rupees ⑤100 rupees

3) Which place has the transportation running the most often times per day?

① Bharatpur ② Dolakha ③Okhaldhunga ④ Itahari ⑤ Dhulikhel

C. Numeracy

1. Quantity Discrimination

☺ Please look at each pair of two numbers below. Which one is greater? Circle the greater number.

1)	४५०	५४०
2)	९१९	९९१
3)	२७६८	२६७३

4) This month, Father spent two hundred twenty-five rupees on electricity, seven hundred –fifteen to purchase rice, three hundred and five rupees on a wedding gift, and one thousand fifty on monthly savings. On what did Father spent the most this month?

① electricity payment ② monthly savings ③ purchasing rice ④ wedding gift

2. Identifying Missing Numbers

☺ Look at the numbers in different sets. In each set, one number is missing. What number should go in each space? Please write the right number in the space.

1	_____, ६००, ७००, ८००, ९००
2	९७८, ९७६, ९७४, ९७२, _____
3	१४५६, १४५८, _____, १४६२, १४६४

3. Applied Numeracy

☺ Please look at the examples each clock carefully and write the correct time in the space.

For example:

1) 9 o'clock

2) **6:10** 6 o'clock and 10 minutes

1)

2)

3) **5: 17**

_____ _____ _____

☺ Please look at each picture of different bills and write in words how much it is worth in the space.

For example: पांच रुपैयाँ

4) _____ रुपैयाँ

5) _____ रुपैयाँ

☺ Please read each question carefully and refer to the calendar below to find an answer for each question. Circle the right date or day under each question.

२०६७ चैत्र			March – April 2011			
आइतबार Sun	सोमबार Mon	मंगलबार Tues	बुधबार Wed	बिहीबार Thu	शुक्बार Fri	शनिबार Sat
		०१ 15	०२ 16	०३ 17	०४ 18	०५ 19 पहाडि क्षेत्रमा फागु
०६ 20 तरई क्षेत्रमा फागु	०७ 21	०८ 22	०९ 23	१० 24	११ 25	१२ 26 ☐
१३ 27	१४ 28	१५ 29	१६ 30	१७ 31	१८ 1	१९ 2
२० 3 घोडे जात्रा	२१ 4	२२ 5	२३ 6	२४ 7	२५ 8	२६ 9
२७ 10	२८ 11 ☐	२९ 12 क्षी राम नवमी	३० 13	बैशाख १ नयाँ वष २०६८ सुरु		

6) What is the date of the last day of 2067 BS?

① April 13 तारिक ② March 13 तारिक
③ March 14 तारिक ④ April 14 तारिक

7) Which pair of a date and a day is correct?

① चैत्र ७ गते – आइतबार ②चैत्र १२ गते – बिहिबार
③ April 12 तारिक – मंगलबार ④March 18 तारिक – शनिबार

8) What is the corresponding date of बैशाख २ गते?

① March 13 तारिक ② April 14 तारिक
③ March 14 तारिक ④ April 15 तारिक

4. Computing skills

☺ Please look at each problem carefully and write the correct answer in each box.

1) ७८ + ६३ ☐ 2) ३४४ + ६६९ ☐ 3) १०२ - ५४ ☐ 4) ८७१ - ४७९ ☐

5) ५४ x ५ ☐ 6) २२५ x ८ ☐ 7) १४० ÷ ७ ☐ 8) ६१२ ÷ १२ ☐

5. Numerical Questions in prose text

☺ Please read the passage and questions related to it carefully. Circle the best answer to each question.

Yesterday, my father left home early in the morning toward the market. He had to carry lots of things in his bamboo basket for 5 hours. In the market, Father sold 3 sacks of potatoes, 5 sacks of beans, 4 bottles of sesame oil, and 2 dozens of chicken eggs at the market yesterday. Potatoes were sold out at the price of 50 rupees per sack. Beans were sold out at 45 rupees per sack. Sesame oil was sold out at 60 rupees per bottle and chicken eggs at 4 rupees per egg.

My father was so happy that he could sell out everything he took to the market and make enough money to buy some rice, soaps, and toothpaste. He bought 4 sacks of rice at the price of 120 rupees per sack, 10 cakes of soap at 10 rupees per cake, 4 tubes of toothpaste at 30 rupees per tube. On the way home, he could drop by a teashop and ordered a cup of milk tea for him. He didn't forget to buy a pack of biscuit for us. So, he came back home in the evening with no money just as the same as when he left home in the morning.

1) How much money did Father get by selling potatoes?

① ५० ② ९६ ③ १५० ④ २२५ ⑤ २४०

2) What is the total sum of the money that Father earned from selling things yesterday? Write the total sum in numbers in the space below.

_____ rupees

3) If Father wanted to buy as many cakes as possible of soap from the money earned from selling sesame oil, how many cakes of soap could he buy? Write the quantity in numbers in the space below.

_____ cakes of soap

6. Computing skills in a document

☺ Please read the document and questions related to it carefully. Circle the best answer to each question.

< Load Shedding Schedule - 07 February 2011 >

Group	SUN	MON	TUES	WED	THURS	FRI	SAT
1. Mangalbazar, Tripureshwor, Tahachal, Pulchowk, Baneshwor, Bagmati Bridge, Koteshwor, Jorpati, Sankhu, Keshar Mahal, Lazimpat, Kamladi, Budha-nilkantha, Khichapokhari	01:00-08:00 13:00-20:00	11:00-18:00 22:00-05:00	09:00-16:00 20:00-03:00	08:00-15:00 18:00-01:00	06:00-13:00 17:00-24:00	04:00-11:00 16:00-23:00	02:00-09:00 15:00-22:00
2. Pharping, Byasi, Thankot, Thapathali Kalimati, Imadol, Gothatar, Naya Bazar, Thankot, Dhulikhel, Ason, Bansbari,Tripuresore, Putalisadak	02:00-09:00 15:00-22:00	01:00-08:00 13:00-20:00	1:00-18:00 22:00-05:00	09:00-16:00 20:00-03:00	08:00-15:00 18:00-01:00	06:00-13:00 17:00-24:00	04:00-11:00 16:00-23:00
3. Patan, Thankot, Kalimati, Godavari-1, Naxal, Airport, Om Hospital,Gairi Dhara, Sanga, Maha Boudhha, Baluwatar, Kalikasthan,Tin Piple, Palanchowk	04:00-11:00 16:00-23:00	02:00-09:00 15:00-22:00	01:00-08:00 13:00-20:00	11:00-18:00 22:00-05:00	09:00-16:00 20:00-03:00	08:00-15:00 18:00-01:00	06:00-13:00 17:00-24:00
4. Ringroad, Pulchowk, New Airport, Dhobhikhola, Danchi, Lazimpat, Nagarjun, Swayambh, Kalimati, Khawa, Sanepa, Teku, Patan, Balkumari, New Road	06:00-13:00 17:00-24:00	04:00-11:00 16:00-23:00	02:00-09:00 15:00-22:00	01:00-08:00 13:00-20:00	11:00-18:00 22:00-05:00	09:00-16:00 20:00-03:00	08:00-15:00 18:00-01:00
5. Saibu, Katunje, Nalinchowk, Old Airport, Battisputali, Tangal, Sundarijal, Bishnumati , Maharajgunj-1, Kalanki, Gongabu, Anamnagar, Melamchi	08:00-15:00 18:00-01:00	06:00-13:00 17:00-24:00	04:00-11:00 16:00-23:00	02:00-09:00 15:00-22:00	01:00-08:00 13:00-20:00	11:00-18:00 22:00-05:00	09:00-16:00 20:00-03:00
6. Radio Nepal, Pulchowk, Nagarkot, Lubhu, Thamel, Dhramshali, Rope way, Kalimati, Nala,	09:00-16:00 20:00-03:00	08:00-15:00 18:00-01:00	06:00-13:00 17:00-24:00	04:00-11:00 16:00-23:00	02:00-09:00 15:00-22:00	01:00-08:00 13:00-20:00	11:00-18:00 22:00-05:00

Durbarmarg, Thimi, Panchkhal							
7. Chapagaon, Jawalakhel, Kirtipur, Sankhamul, Pashupati, Mahankal, Samakhusi, Balambu, Swayambu Hosiptal, Khopasi, Panuti, Galfutar, Sallaghari, Bhotebahal, Bhrikuti Mandap	11:00-18:00 22:00-05:00	09:00-16:00 20:00-03:00	08:00-15:00 18:00-01:00	06:00-13:00 17:00-24:00	04:00-11:00 16:00-23:00	02:00-09:00 15:00-22:00	01:00-08:00 13:00-20:00

1) Maya lives in Lazimpat which belongs to Group 4. When will she have light on Thursdays? Write the time period in the space below.

_____ - _____ and _____ - _____

2) How many hours is the electricity provided per day in all areas of the Kathmandu Valley?

_____ hours per day

3) How many hours is the electricity cut off per week in all areas of the Kathmandu Valley?

_____ hours per week

E. Writing: Dictation

Your Full Name: _____

1. _____ 'government'

2. _____ 'certificate'

3. _____ 'family plan'

4. _____ 'to run a literacy class' (purpose)

5. _____

‘Education can bring development in the personal and communal life.’

6. _____

‘The habit of washing hands keeps you from many kinds of diseases.’

7. _____

‘Planting trees and conserving forest should be the main project of our village.’

APPENDIX G

Questions for Brief Interview (within 5 minutes)

1. What is your name? _____

2. How old are you? _____ years old *Gender: Male__ Female__

3. Are you married or not married yet? (Make a tick on the relevant space)

   Married _____ Not yet married _____ Widow/Widower_____

4. What is your mother tongue or first language? _____

5. What is the highest grade that you have completed if you have been in a school?

   G1____ G2____ G3____ G4____ G5____ Over G5: Grade_____

6. Have you ever learn in a literacy program before?

   Yes_____ No_____

7. (If yes for #6) How long have you been in the program?

   _____ month(s)

---

* Teacher's Name: _____

* Village: _____ * District: _____

* Interviewer's name: _____

* Date: _____/_____/_____ (Day/Month/Year)

REFERENCES

Acharya, Sushan and Bidya Nath Koirala. 2006. *A comprehensive review of the practice of literacy and nonformal education in Nepal*. Kathmandu: UNESCO.

Adams, Marilyn Jager. 1990. *Beginning to read: Thinking and learning about print*. Cambridge, MA: Massachusetts Institute of Technology Press.

Anthony, Robert J., Terry D. Johnson, Norma I. Mickelson, and Alison Preece. 1991. *Evaluating literacy: A perspective for change*. Portsmouth, NH: Heinemann.

Awasthi, Lava Deo. 2004. *Exploring monolingual school practices in multilingual Nepal*. PhD thesis. Danish University of Education, Copenhagen, Denmark.

Baer, Justin, Mark Kutner, and John Sabatini. 2009. *Basic reading skills and the literacy of America's least literate adults: Results from the 2003 National Assessment of Adult Literacy (NAAL) supplemental studies (NCES 2009-481).* Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Also available online http://nces.ed.gov/pubs2009/2009481.pdf. (Feb. 15, 2011.)

Banknotes.com. World bank notes: Currency gallery-Nepal. http://www.banknotes.com/np.htm. (April 10, 2011.)

Black, Thomas R. 1999. *Doing quantitative research in the social sciences: An integrated approach to research design, measurement, and statistics.* London: SAGE Publications.

Bhola, H.S. 1994. *A source book for literacy work: Perspective from the grassroots*. Paris: UNESCO.

Boudard, Emmanuel and Stan Jones. 2003. The IALS approach to defining and measuring literacy skills. *International Journal of Education Research.* 39 (3). 191-204.

Central Intelligence Agency. The world factbook: South Asia: Nepal. https://www.cia.gov/library/publications/the-world-factbook/geos/np.html. (April 21, 2011.)

Colosi, Laura A. 1997. The layman's guide to social research methods: Reliability and validity. http://www.socialresearchmethods.net/tutorial/Colosi/lcolosi2.htm. (March 3, 2011.)

Comings, John P., Chij K. Shrestha, and Christine Smith. May 1992. A secondary analysis of a Nepalese national literacy program. *Comparative Education Review.* 36 (2). 212-25.

Comings, John P. 2009. A manual for the development of a Rapid Assessment of Reading Skill Test (RARS). Newton, MA: Education Development Centre, Inc. Electronically obtained directly from Comings through email exchange.

Davis, Patricia M. 2004. *Reading is for knowing: Literacy acquisition, retention, and usage among the Machiguenga*. Dallas: SIL International.

Deep, Dhurba Krishna. 2001. *Selected folk tales of Nepal*. Kathmandu: Ekta Books.

Digital Himalaya. Mother tongue Pipal Pustak archive online. http://www.digitalhimalaya.com//collections/journals/mtpp. (Jan. 11, 2011.)

Driggs, Cheryl. CFD Publications: Rehydration drinks. http://www.simplyprepared.com/rehydration%20drinks.htm. (April 7, 2011.)

Eagle, Sonia. 2000. The language situation in Nepal. *Language planning: In Nepal, Taiwan and Sweden.* ed. by Richard B. Baldauf Jr. and Robert B. Kaplan. Philadelphia: Multilingual Matter Ltd. 4-59.

Eastern Tamang Language Team. ETLT progress report January-April, 2010.

——— ETLT progress report April-June, 2010.

——— ETLT progress report July-September, 2010.

——— 2008. *Eastern Tamang Primer Book 1* (*छार ज्यालम, किताब - १*).

——— 2008. *Eastern Tamang Primer Book 2* (*छार ज्यालम, किताब - २*).

——— 2011. *Wall calendar 2011* (*भिते पात्रो २०६७/२०६८*).

Fricke, Tom. 1994. *Himalayan households: Tamang demography and domestic processes.* New York: Columbia University Press.

Gray, William S. 1956. *The teaching of reading and writing*. Paris: UNESCO.

Glover, Warren W. 1974. *Sememic and grammatical structures in Gurung (Nepal)*. Kathmandu: SIL.

Gove, Amber. 2009. Assessing foundation skills in reading. Power point presentation at the First Read Global Conference, "Developing a Vision for Assessment Systems", in October 2, 2009. http://www.worldbankrussia.ru/files/244.pdf. (March 14, 2011.)

Gudschinsky, Sarah C. 1973. *A manual of literacy for preliterate peoples*. Ukarumpa, Papua New Guinea: SIL, Inc.

Himalayan Times. 2011. Mothers' bid for model village. http://www.thehimalayantimes.com/fullNews.php?headline=Mothers%26acute%3B+bid+for+model++village&NewsID=282964. (April 6, 2011.)

Hook, Pamela E. and Sandra D. Jones. 2002. The importance of automaticity and fluency for efficient reading comprehension. *International Dyslexia Association quarterly newsletter, Perspectives*. 28 (1). 9-14. http://www.resourceroom.net/readspell/2002_automaticity.asp. (March 14, 2011.)

Hough, David A., Amrit Yonjan-Tamang, and Ram Bahadur Thapa Magar. 2009. Privileging indigenous knowledges: Empowering multilingual education in Nepal. *Social justice through multilingual education.* ed. by Tove Skutnabb-Kangas, Ajit K. Mohanty, Minati Panda, and Robert Phillipson.146-61. Tonawanda, NY: Multilingual Matters.

Iowa Department of Education. 2005. Iowa's adult literacy program assessment policy guidelines. Des Moines, IA: Iowa Department of Education. http://www.readiowa.org/standards/assesspolguide.pdf. (Feb. 25, 2011.)

Joshua Project-Unreached Peoples of the World: Nepal-People group. 2006-2011. http://www.joshuaproject.net/countries.php?rog3=NP. (Sept. 4, 2010.)

Jones, Stan. 1997. Measuring adult basic skill: A literature review. *Adult basic skills: Innovation in measurement and policy analysis*. ed. by Albert C.Tuijnman, Irwin S. Kirsch, and Daniel A. Wagner. 115-138. Cresskill, NJ: Hampton Press, Inc.

Kamens, David H. and Connie L. McNeely. 2010. Globalization and the growth of international educational testing and national assessment. *Comparative Education Review.* 54 (1). 5-25.

Kehrberg, Norma. 1996. "Not what is but what can be": Women empowerment and adult functional literacy. http://www.literacy.org/sites/literacy.org/files/publications/kehrberg_womens_lit_in_Nepal_96.pdf. (June 7, 2010.)

Khadka, Anju, Tikaram Chaudhary, Keshar Jung Magar, Ananda Chaudary, and Rajan Pokhrel. 2006. *Literacies from a multilingual perspective: Learning from Tharu, Tamang, Newar, and Limbu language communities of Nepal*. Kathmandu: UNESCO. http://unesdoc.unesco.org/images/0014/001474/147479e.pdf. (June 28, 2010.)

Kiff, Joe (ed.) 2009. Psychology Wiki: Item Response Theory. http://psychology.wikia.com/wiki/Item_response_theory. (Feb. 15, 2011.)

Kirsch, Irwin S. 2001. *The international adult literacy survey (IALS): Understanding what was measured*. Research report (RR-01-25). Princeton, NJ: Educational Testing Service, Statistics and Research Division.

Kirsch, Irwin S. and Ann Jungeblut. 1986. *Literacy: Profiles of America's young adults*. Report No. 16-PL-02. Princeton, NJ: National Assessment of Educational Progress at Educational Testing Service.

——— 1997. Using large-scale assessment results to identify and evaluate generalizable indicators of literacy. *Adult basic skills: Innovation in measurement and policy analysis*. ed. by Albert C. Tuijnman, Irwin S. Kirsch, and Daniel A. Wagner. 187-207. Cresskill, NJ: Hampton Press, Inc.

Kudo, Ines and Jorge Bazan. 2009. Measuring beginner reading skills: An empirical evaluation of alternative instruments and their potential use for policymaking and accountability in Peru (Policy making working paper 4812). Washington DC: Latin America, and the Caribbean Region, Human Development Department, Education Sector, the World Bank.

Lee, Ernest W. 1982. *Literacy primers: The Gudschinsky method.* Dallas: SIL.

Lewis, M. Paul. (ed.) 2009. *Ethnologue: Languages of the world, sixteenth edition*. Dallas: SIL International.

Lewis-Beck, Michael S., Alan Bryman, and Tim Futing Liao. (eds.) 2004. Validity. *The SAGE encyclopedia of social science research methods. Vol. 3*. 1171. Thousand Oaks, CA: SAGE Publications.

Lien, Arnold J. 1976. *Measurement and evaluation of learning*. 3rd edn. Dubuque, Iowa: Wm. C. Brown Company.

Literacy Information and Communication System (LINCS). 2011. Assessment strategies and reading profiles: Reading components. http://lincs.ed.gov/readingprofiles/MC_Reading_Components.htm. (March 14, 2011.)

Malone, Dennis L. Book review of Street, Brian V. (ed.) 2001. *Literacy and development: Ethnographic perspectives*. London and New York: Routledge.

Matthews, Delle P., Trudy K. Stewart, and Leah B. Walter. 2003. What are literacy skills? LinguaLinks 5.0\ Library\CWEdition\Litera50 (nfo) \Literacy Bookshelf\Glossary of literacy terms\Glossary (Literacy):L\What are literacy skills? Dallas: SIL International.

Mazaudon, Martine. 2003. Tamang. *The Sino-Tibetan languages*. ed. by Graham Thurgood and Randy J. LaPolla. Routledge Language Family Series. 291-314. London: Routledge.

McMurrey, Daniel A. Online technical writing: Examples, cases, and models-Index. How to raise potatoes in home garden. http://www.io.com/~hcexres/textbook/instrxx4c.html. (April 7, 2011.)

McShane, Susan. 2005. *Applying research in reading instruction for adults*. Washington D.C.: National Institute for Literacy. http://lincs.ed.gov/publications/pdf/applyingresearch.pdf. (March 14, 2011.)

Medel-Añonuevo, Carolyn. 1996. *Women reading the world: Policies and practices of literacy in Asia*. Hamburg: UNESCO Institute for Education.

Ministry of Education, Government of Nepal. 2007. Three Year Interim Plan (2064/65-2066/67). http://www.moe.gov.np/new/userfiles/file/plans_policies/eng/Three%20Years%20Interim%20Plan.pdf. (July 10, 2010.)

——— 2009. School Sector Reform Plan (SSRP) 2009-2015. http://moe.gov.np/new/. (Dec. 14, 2010.)

Ministry of Education of the State of Eritrea. 2005. *Eritrea National Reading Survey, September 2002*. Dallas: SIL International.

Moran, Joseph J. 1997. *Assessing adult learning: A guide for practitioners*. Malabar, FL: Krieger Publishing Company.

Murray, T. Scott. 1997. Proxy measurement of adult basic skills: Lessons from Canada. *Adult basic skills: Innovation in measurement and policy analysis*. ed. by Albert C. Tuijnman, Irwin S. Kirsch, and Daniel A. Wagner. 163-186. Cresskill, NJ: Hampton Press, Inc.

Murray, T. Scott, Irwin S. Kirsch, and Lynn B. Jenkins. (eds.) 1998. Adult literacy in OECD countries: Technical report on the first International Adult Literacy Survey. Pre-publication copy. National Center for Education Statistics. http://nces.ed.gov/pubs98/98053.pdf. (Feb. 8, 2011.)

Murray, T. Scott, Yvan Clermont, and Marilyn Binkley. 2005. *Measuring adult literacy and life skills: New frameworks for Assessment*. Catalogue No. 89-552-MIE, No. 13. Ottawa: Statistics Canada. http://www.statcan.gc.ca/pub/89-552-m/89-552-m2005013-eng.pdf. (July 7, 2010.)

National Early Literacy Panel (NELP). 2009. Developing early literacy: Report of the National Early Literacy Panel, executive summary. Washington, DC: National Institute for Literacy. http://www.nichd.nih.gov/publications/pubs/upload/NELPSummary.pdf. (Feb. 23, 2011.)

National Resource Center (NRC) for Non-Formal Education. 2001. Innovation in literacy and Non-Formal Education. *Literacy Watch Bulletin*. No.17. Tokyo: Asia-Pacific Cultural Center for UNESCO. www.accu.or.jp/litdbase/literacy/nrc_nfe/eng_bul/BUL17.pdf. (August 17, 2010.)

National Research Council. 2001. *Knowing what students know: The science and design of educational assessment*. Committee on the Foundations of Assessment. ed. by James W. Pelligrino, Naomi Chudowsky, and Robert Glaser. Board on Testing and Assessment, Center for Education. Division of Behavioral and social Sciences and Education. Washington, DC: National Academy Press.

National Research Council (NRC) of the Nation Academies. 2005. *Measuring literacy: Performance levels for adults.* ed. by Robert M. Hauser, Christopher F. Edley, Jr., Judith Anderson Koenig, and Stuart W. Elliott. Washington, D.C.: The Nation Academies Press.

Nepal National Commission for UNESCO, Ministry of Education and Sports of Nepal. 2003. Education for All national plan of action.

http://www.nncu.org.np/publications/education_for_allnational_plan_of_action.doc. (Feb. 23, 2011.)

Non-Formal Education Center (NFEC), Ministry of Education, Government of Nepal. 2007. Non-formal education policy, 2063. http://www.moe.gov.np/new/userfiles/file/plans_policies/eng/NFEC%20Policy%202063.pdf. (July 12, 2010.)

——— 2008. *Naya Goreto 2065*. http://nfec.gov.np/old/index.php?act=publication&file=nayagorato.pdf&no=45. (July 12, 2010.)

Organization for Economic Cooperation and Development (OECD). 2009. International adult literacy and basic skills survey in the OECD region. OECD Working Paper No. 26. http://www.oecd.org/dataoecd/32/54/45052608.pdf. (Feb. 12, 2011.)

Research Triangle Institute (RTI) International.2009. Early grade reading assessment (EGRA) toolkit. http://eddataii.rti.org/documents/index.cfm/EGRA%5FToolkit%5FMar09.pdf?fuseaction=throwpub&ID=149. (March 15, 2011.)

Reubens, Andrea and Luis Crouch. 2009. Early Grade Math Assessment (EGMA): A conceptual framework vased on mathematics skills development in children. https://www.eddataglobal.org/documents/index.cfm?fuseaction=pubDetail&ID=193. (March 14, 2011.)

Robinson-Pant, Anna. 2001. Women's literacy and health: Can an ethnographic researcher find the links? *Literacy and development: Ethnographic perspectives*. ed. by Street, Bryan V. 152-170. London and New York: Routledge.

——— 2010. Changing discourses: Literacy and development in Nepal. *International Journal of Educational Development.* 30 (2). 136-44.

Shanahan, Timothy. 2007. Early literacy development: Sequence of acquisition. *Encyclopedia of Language and Literacy Development.*1-6. London, ON: Canadian Language and Literacy Research Network. http://www.literacyencyclopedia.ca/pdfs/topic.php?topId=225. (Feb. 23, 2011.)

Shrestha, Chij Kumar. 2004. Literacy program for ethnic minorities. A country report-Nepal to the Regional Workshop on Mother Tongue/Bilingual Literacy Program for Ethnic Minorities at Kunming, China, May 17-22, 2004.

Shrestha, Ramesh. 1977. Adult literacy in Nepal: A report. Kirtipur, Nepal: Institute of Nepal and Asian Studies, Tribhuvan University. http://rameshshrestha.com/upload/research/Adult_Literacy_in_Nepal_RS.pdf. (June 24, 2011.)

Sonntag, Selma K. 2007. Change and permanence in language politics in Nepal. *Language policy, culture, and identity in Asian contexts*. ed. by Tsui, Amy B.M. and James W. Tollefson. 205-18. Mahwah, NJ: Lawrence Erlbaum Associates Inc.

Stern, David and Albert Tuijnman. 1997. Adult basic skills: Policy issues and a research agenda. *Adult basic skills: Innovation in measurement and policy analysis*. ed. by Albert C. Tuijnman, Irwin S. Kirsch, and Daniel A. Wagner. 1-16. Cresskill, NJ: Hampton Press, Inc.

Street, Brian V. 1984. *Literacy in theory and practice*. Cambridge Studies in Oral and Literate Culture 9. Cambridge: Cambridge University Press.

The Teachers Corner. 1998-2011. Telling time worksheets. http://www.theteacherscorner.net/printable-worksheets/make-your-own/telling-time/index.php. (April 10, 2011.)

Thokar, Rajendra. 2008. Tamang: A sociolinguistic scenario. *Nepalese linguistics: Journal of the Linguistic Society of Nepal.* 23. 391-407. Digital Himalaya by University of Cambridge. http://www.Digitalhimalaya.com/collections/journals/nepling. (Sept. 4, 2010.)

Tuladhar, Sumon K. 1997. Literacy in Nepal: The CERID/CIE Project. A report to Asia Literacy Regional Forum, May 5-9, 1997, Manila, Philippines.

UNESCO. 1957. World illiteracy at mid-century. http://unesdoc.unesco.org/images/0000/000029/002930eo.pdf. (Jan.28, 2011.)

——— 1972. *Literacy 1969-1971: Progress achieved in literacy throughout the world*. Paris: UNESCO.

——— 1978. Revised recommendation concerning the international standardization of educational statistics. Paris: UNESCO. http://portal.unesco.org/en/ev.php-URL_ID=13136&URL_DO=DO_TOPIC&URL_SECTION=201.html. (July 5, 2010.)

——— 2004. The plurality of literacy and its implications for policies and programs: Education Sector position paper. Paris: UNESCO. http://unesdoc.unesco.org/images/0013/001362/136246e.pdf. (July 2, 2010.)

——— 2005. Aspects of literacy assessment: Topics and issues from the UNESCO Expert Meeting on June10-12, 2003. Paris: UNESCO. http://unesdoc.unesco.org/images/0014/001401/140125eo.pdf. (Feb. 17, 2011.)

——— 2008. A report of South Asia Education for All Mid-Term Policy Review Conference (June 16-19, 2008, Kathmandu, Nepal).

——— 2009. Inventory of non-formal education providers in Nepal. Kathmandu: UNESCO. http://unesdoc.unesco.org/images/0018/001863/186394e.pdf. (Dec. 7, 2010)

——— 2010. UNESCO initiative to measure literacy through household survey. http://portal.unesco.org/geography/fr/ev.php-URL_ID=12285&URL_DO=DO_TOPIC&URL_SECTION=201.html. (Feb.18, 2011.)

UNESCO and the Asia/Pacific Cultural Center for UNESCO. 2003. National literacy policies: Nepal. http://www.accu.or.jp/litdbase/policy/npl/index.htm. (Dec. 15, 2010.)

UNESCO-UIS. Guadalupe, César, Brenda Tay-Lim, Manuel Cardoso, and Lucia Cirardi. 2009. The next generation of literacy statistics: Implementation of Literacy Assessment and Monitoring Program (LAMP). Technical paper No.1. Montreal: UNESCO Institute of Statistics. http://www.uis.unesco.org/template/pdf/LAMP/LAMP_Rpt_2009_EN.pdf. (Feb. 16, 2011.)

——— 2010. UIS statistics in brief: Nepal. Literacy rates-15 years and older-2009. http://stats.uis.unesco.org/unesco/TableViewer/document.aspx?ReportId=124&IF_Language=eng&BR_Country=5240&BR_Region=40535. (May 19, 2011.)

UNESCO and United Nations Literacy Decade (UNLD). 2009. United Nations literacy decade: International strategic framework for action. Paris: United Nations Literacy Decade Coordination Unit. http://unesdoc.unesco.org/images/0018/001840/184023e.pdf. (Feb. 17, 2011.)

United Nations Cartographic Section. 2007. Nepal. Map No. 4304. www.un.org/Depts/Cartographic/map/profile/nepal.pdf. (April 27, 2011.)

University of Oregon Center on Teaching and Learning. 2008. DIBELS Data System: General information about DIBELS measures. https://dibels.uoregon.edu/docs/dibelsinfo.pdf. (March 14, 2011.)

U.S. Department of State, Bureau of South and Central Asian Affairs. 2009. Background Note: Nepal. http://www.state.gov/r/pa/ei/bgn/5283.htm. (July 7, 2010.)

Varenkamp, Bryan K. 1996. *Tamang Tam: A sociolinguistic study of Eastern Tamang dialects (in Nepal)*. Kirtipur, Nepal: Centre for Nepal and Asian Studies, Tribhuvan University.

——— 2005. Central Eastern Tamang grammar. ETCh2 Phonology.doc and ETCh3 Tone.doc [Unpublished]

Vella, Jane, Paula Berardinelli, and Jim Burrow. 1998. *How do they know they know?: Evaluating adult learning*. San Francisco: Jossey-Bass Publishers.

Wagner, Daniel A. 1990. Literacy assessment in the Third World: An overview and proposed schema for survey use. *Comparative Education Review.* 34 (1). 112-38.

——— 2003. Smaller, quicker, cheaper: Alternative strategies for literacy assessment in the UN Literacy Decade. *International Journal of Educational Research.* 39 (3). 293-309.

——— 2004. Monitoring and measuring adult literacy: Different models for different purposes. A paper commissioned for the 2005 EFA Monitoring Report. Obtained directly from Wagner through email exchange. Also available online http://www.literacy.org/sites/literacy.org/files/publications/Wagner_MeasLit_GMR06_Unesco.pdf. (Feb. 15, 2011.)

——— 2008. Adult literacy: Monitoring and evaluation for practices and policy. *International Review of Education.* 54. 651-72.

Wagner, Daniel A., John Sabatini, and Iddo Gal. 1999. Assessing basic learning competencies among youth and young adults in developing countries: Analytic survey framework and implementation guidelines. Final report based in expert workshop for EFA 2000 on April 12-14, 1999. Philadelphia: International Literacy Institute.

World Bank. 2011. Data by country: GDP per capita. http://data.worldbank.org/indicator/NY.GDP.PCAP.CD/countries. (April 21, 2011.)

——— 1984. Nepal: Primary Education Project. Staff appraisal report. Report No. 4785-NEP. http://www-wds.worldbank.org/external/default/main?pagePK=64193027&piPK=64187937&theSitePK=523679&menuPK=64187510&searchMenuPK=64187283&siteName=WDS&entityID=000178830_98101901064619. (May 10, 2011.)

World Education 1953-2003. http://www.worlded.org/docs/AR_2003.pdf. (Dec. 21, 2010.)

Young, Donna. 1999-2011. Clock worksheets: Write the time. http://donnayoung.org/f11/math-f/clocks/writtime.pdf. (April 10, 2011.)

VITA

of

Young Mee Kim

Education:

March, 1984-February, 1988. Bachelor of Arts with major in English Education at Kyungpook National University, Taegu, South Korea.

February, 2009-June, 2011. Master of Arts with major in Language Development at Graduate Institute of Applied Linguistics, Dallas, Texas, USA.

Work:

September, 1988-August, 1989. English teacher in Pyungri Middle School, Taegu, South Korea.

September 1989-March 1990. English teacher in Kasan Middle School, Seoul, South Korea.

July, 1993-January, 2006. Literacy specialist with Summer Institute of Linguistics in Nepal