The Real Cost of English Functional Illiteracy in South Africa

A presentation by Zerelde Uys and Marina Pretorius at SIOPSA conference 27 July 2015
Overview

This study will illustrate the relationship between the core understanding of ‘literacy’ and the layers built around it in order to make a projection of the real cost of the lack of English Functional Literacy levels in South Africa.

• **The Core:** We will investigate the core concept of literacy; the traditional understanding of reading and writing and what language is about.

• **Layer 1:** The English literacy dilemma in South Africa forms the first layer wrapping the core concept of literacy. We will provide insight into the nature of this dilemma.

• **Layer 2:** The next section will explain what we measured; not only the levels of operational use of English, but also the ability of a candidate to conceptualise and build new knowledge in English.

• **Layer 3:** An important layer added is the advantages enjoyed by the literate individual.

• **Layer 4:** Why literacy matters to the country is also an important dimension to add. We will explain the effect on the economy according to literature studied.

• **Wrapping it up:** In our conclusion, we propose two choices; maintain the status quo, or effect significant change with a focused approach.
The Core: ‘Read & Write’

‘Read & Write’: What is Language and what then, is Literacy?

‘Language’ is a system of symbols allowing people to communicate or interact. These symbols can be vocal, written forms thereof, gestures and body language. Language is about mastering the four basic skills, listen, speak, read and write, but also integrating all four skills at the same time. Macro skills development should lead to micro skills development such as grammar, vocabulary, pronunciation and spelling.

Language is about the encoding and decoding of a message. We used Stuart Hall’s model to explain. Encoding of a message is the production of the message. Important that the sender will understand how the audience will receive the message and are able to construct it accordingly. Decoding is the understanding and interpretation of the message by the audience.

“A message is first ‘encoded’, that is transformed into an understandable sign and symbol system. Speaking is encoding, as are writing, printing, and filming a television program. Once received, the message is ‘decoded’; that is, the signs and symbols are interpreted. Decoding occurs through listening, reading, or watching that television show.”

The quote explains the term “encoding” as equivalent to verbal communication and “decoding” to be compared to nonverbal communication. Both aspects of communication are as important as the understanding of how one might affect the other. A good communicator will therefore play both roles effectively.

There is a direct relationship between language and cognitive thinking. We describe cognitive thinking as the ability to conceptualise, which is directly determined by a person’s mastery of the vocabulary, the syntax of the language and the prior knowledge established.

We illustrate the principles with our example:

If you make a statement that it will be snowing in Pretoria this coming December, I will immediately refer to my stored info (prior knowledge databank) where I will extract knowledge from primary school Geography about location in the Southern hemisphere, typical temperatures and summer rainfall areas. I will validate your statement against this information and come up with an argument against it. You however then tell me about new research about the ozone layer issues and justify the reasons for predictions of a serious blow-out in November affecting mostly Gauteng at first. Referring to my stored information on this particular topic for about the last 10 years, I validate the possibility of this being a reality, find it disturbingly possible, hereby extending my knowledge and depositing updated information in my databank.
The pre-requisites for this extension of knowledge were however:
• I should have understood the word ‘snow’, and
• I should have understood the concept ‘snow’, or
• If I did not understand ‘snow’ in the language offered, I should have been able to translate it to my mother tongue, and
• I should have had organised prior knowledge to readily make reference to.

If new learning cannot be fitted into prior learning (and language can be the most prominent obstruction), it remains an isolated response with no meaning, resulting in the typical rote learning or parrot style learning for purpose of coping as an immediate need.

What is Literacy?
The evolving of the definition on a timeline:

1965: UNESCO - The Persepolis Declaration.
1978: The Toronto Seminar on Literacy in Industrialized Countries.
1987: The 1987 definition of literacy by the Toronto Seminar on Literacy in Industrialised Countries raised the bar for basic literacy given the demands of advancing technology; Literacy is more than the ability to read, write and compute. The demands created by advancing technology require increased levels of knowledge, skills and understanding to achieve basic literacy.

In 1958, UNESCO (United Nations Educational, Scientific, and Cultural Organization) provided an elementary definition of literacy; ‘A literate person is one who can, with understanding, both read and write a short simple statement on his or her everyday life.’

Since then, the definition of literacy has evolved. From 1965 to 1978 the concept of functional literacy was introduced, linking the purpose of literacy to the definition thereof; 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.

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This is especially true for literacy in the 21st century if one keeps in mind the thinking around 21st century (3rd Millennium) skills; Abstraction & Cognition, Experimentation, System thinking and Collaboration.

We provide a visual display of the scope of Literacy on the next page. Note the three important thresholds:

• Marginal literacy: The Foundational skills to satisfy immediate needs using rehearsed speech.

• Functional Literacy: The reading and writing skills necessary for everyday living, including work. Theoretically a skills level equivalent to eight years of formal schooling.

• Academic Literacy: The ability to do critical reading, writing, thinking and the ability to respond accordingly. Theoretically a skills level equivalent to ten years of formal schooling.
The Scope of Literacy

Note the development process and the three notable thresholds to cross for specific language mastery and application in real life.

- **ABET 2 Survival Proficiency**: Understands some simple words and phrases. Can survive in the environment, but cannot communicate effectively. Able to satisfy immediate needs such as accommodation, meals and transportation, using memorised (or rehearsed) speech only. No fluency.

- **ABET 3 Minimal Social/Limited Work Proficiency**: Can take part in simple social conversation. Can give simple instructions, but cannot explain. Will exchange greetings, elicit predictable information and explain routine procedures in a restricted way. Adequate for only some simple routine practical work. At this level there will be no real social or professional communication.

- **NQF 1 Minimal Professional Proficiency**: Can initiate and take part in ordinary social conversation. Can typically ask and answer predictable questions in workplace, receive and provide straightforward direction. Able to interact with descriptive or narrative writings such as routine reports, simple biographic information, formulating business letters, and simple technical material for the general reader. Can discuss professional matters, but not always accurately or fluently. This level is minimum for a satisfactory performance of professional tasks.

- **NQF 3 Full Professional Proficiency**: Can establish and maintain successful social communication and are able to use language fluently and accurately on all levels appropriate for professional performance. Can discuss professional matters fluently, accurately and appropriately. Language will very rarely be a hindrance to a successful performance of tasks.

- **NQF 4 Native Speaker Proficiency**: Compete mastery of the language in all situations. Native speaker proficiency is a very high level of competence for a non-native.
South Africa: The English literacy dilemma

We have identified two major burning platforms in the South African context. With 11 official languages and English being the preferred language of commerce, 90% of South Africans are exposed to another language than English from birth; the foundations of listening & speaking, development of thought, building a frame of reference, development of vocabulary & syntax are facilitated in the mother tongue or home language.

Another unfortunate reality is the fact that our education system has limited success in preparing learners to enter the workplace of the third millennium. We will refer to this in later slides viewing the South African realities.

To re-cap the definition of The Language Transferee as described by Theunis Horne, developer of the ELSA; A Language Transferee is a person who transfers daily from his or her natural language environment to a different one in order to make a living and is expected to cope as a mother-tongue user. Now add the definition of Functional Literacy as the basic skills (literate and numerate) needed to cope with the demands of life and the workplace, and it is evident that 90% of our society use two different languages for life and work. So let us applaud the 90% of Proud Transferees!

This is a visual display of the proportions of the Dilemma where English is the language of the workplace. If we group the 10% of English first language users, the 2-4% of co-ordinate bilinguals (smooth transition between languages), the 8% of compound bilinguals (using their mother tongue as mediator, but exposed to good models and therefore successful) together, we unfortunately have to conclude that one can be sure of less than 25% of any given workplace fully understanding all communications with the ability to respond appropriately.
ELSA’s first level of measure is the ability to integrate the four basic skills in English; listen, speak, read, and write. It will indicate the cognition and proficiency in English – the ability to think to speak.... The benchmark is the outcomes expected of a mother tongue English user.

Performance is expressed at NQF levels or equivalent grade outcomes, but the true value lies in the insight into the mastery of individual skills on the continuum of proficiency of English literacy as seen on the radar diagramme. We have summarised the seven aspects on the continuum which constitutes literacy. Second order factors indicating the reading processing ability and predicted trainability level within the FET band are further valuable information about a candidate.

Primary Output:
ELSA measures the comfort level in English. Results are expressed at NQF level or equivalent grade proficiency.

Secondary Output:
ELSA offers insight into the mastery of individual skills on the continuum of proficiency of English literacy.

A second level of value indicated by ELSA is the ability to conceptualise and integrate with new knowledge in the language of English. The level of success with which a candidate will be able to use prior knowledge to create new knowledge and store it for future reference where English is the medium of instruction should be a critical factor when planning for development of skills of the individual. Refer to the ‘Snow in December’ example.... The pre-requisite for learning is the recognition of vocabulary, having understanding of the concept it represents, able to translate it from the mother tongue if needed and the ability to access and organise information in the mind. If this is absent, no learning will take place, no matter the potential of the learner.
National results using the ELSA Intermediate:
This sample of 9,883 candidates were assessed from 2012 to 2014 using the ELSA Intermediate, which scans English Proficiency from Illiteracy to beyond NQF 4 or grade 12 levels. In this sample, 14% of candidates had recorded English to be their mother tongue. Candidates assessed with ELSA Intermediate are deemed to have matriculated. The average candidate displays a proficiency in English at the outcomes of ABET 3 or grade 7 level. This trend is reflected in similar data.

National results using the ELSA Elementary:
4,146 candidates were assessed from 2012 to 2014 using the ELSA Elementary, which scans English Proficiency from Illiteracy to NQF 1 or grade 9 level. It indicates that a candidate is proficient beyond grade 9, but it does not scan the FET band such as Intermediate does. In this sample, 3% of candidates had recorded English to be their mother tongue. Candidates assessed with ELSA Elementary are mostly applied in blue collar employment, do not interact with text as their primary job focus, or have not matriculated. The graphs display the spread of skills of this sample group, with the curve peaking at grade 7 /grade 8 level.
Results using the ELSA Scanner:
A sample of 26,605 candidates enrolled at a tertiary institution where the medium of instruction is English, assessed from 2006 to 2015 using the ELSA Scanner. It is an abbreviated ELSA Intermediate, a group-measuring instrument: it quantifies, but does not diagnose like ELSA Intermediate. It expresses an employee’s literacy skills level in terms of grades, placing at a below Grade 8 level, or Grade 8/9, or Grade 10/11 or Grade 11/12+. It is not a fine-tuned instrument. Unlike ELSA Intermediate, it does not give a precise grade level.

ELSA Scanner is used where it is assumed that the population group are proficient at levels in the FET Band, and where a quick scan is done to determine a rough placement, in this case in language bridging programmes.

This study shows that about 72% of white-collar workers with Grade 12 certificates are neither functionally literate in English nor functionally numerate (equivalent Grade 7 level and lower).

Language distribution in this sample group

Technical Features of ELSA
- ELSA is a standardised, reliable and valid assessment.
- It is essentially a scanning assessment; it scans language ability and determines performance levels as per cut-off ranges.
- It not only measures the integration of listen, speak, read and writing skills, but also the ability to conceptualise and integrate with new knowledge in English.
- Performance is expressed as at a NQF level, benchmarked against English mother tongue speaker outcomes.
- The scoring is objective and the functions are mastery, survey and diagnostic.
- Predictive Validity: 84%; Reliability: 0,67
- ELSA is not a psychometric test, it measures skills.
- ELSAs are mainly verbal (written) assessments including mixed power and speed testing.
- It is a Paper & pen assessment, with an electronic version (e-ELSA) for computer literate candidates.
Why literacy matters to the individual

Reconsider the most recent UNESCO definition that literacy must go beyond the process of learning the skills of reading, writing and arithmetic, but must contribute to the liberation of man and to his full development. Also be reminded of the ultimate vision of the NDP to eliminate poverty and reduce inequality through growth by 2013. We have found various studies to confirm the following:

- The Individual benefits from better levels of literacy in his/her earning potential, life satisfaction, inclination to take part in life as a good citizen, a greater interest in politics and democracy and better work prospects overall.
- The benefits to households include the impact of the parent’s literacy level on the child’s development, the level of parent education making a difference in learner performance, an increased school attendance by the next generation and the access to information of a household with one literate person.

Why literacy matters is emphasised in the statement by Prof Jeanne Chall from Harvard; “People who are significantly below average in literacy are less successful in using other academic skills, in continuing education, and in their jobs”.

And in South Africa we have the inevitable crossing of Economy street with English lane.....

English literacy matters in workplaces, because where skills are low or poorly developed, one will notice....

- Phonics: ...misunderstanding of instructions, apparent inability to assist customers,
- Dictation: ...poorly constructed or formulated e-mails are sent, reports are incoherent, basic conventions of writing are not upheld – spelling, capitals, punctuation,
- Basic Numeracy: ...simple actions need a calculator, mistakes are made on orders, dates or telephone numbers,
- Spatial grammar: ...difficulty in giving or receiving directions, inability to explain where a truck broke down, technical concepts are challenging to understand or explain,
- Comprehension: ....inaccurate response to memos’, details are missed in communications or reports, reading in general is slower than the expected pace in the work environment,
- Closing the Gaps indicating the ‘feel’ for English: ...a general discomfort to speak and write English,
- Vocabulary in context: ...restricted vocabulary, difficulty to express oneself in a sophisticated environment, slower to process sophisticated text than would be expected.
Why literacy matters to the country

Why Literacy matters to the Country

A study by the Department of Economics and The Bureau of Economic Research at the University of Stellenbosch, The Cost of Illiteracy, concludes that microeconomic and macroeconomic estimates suggest that with a more typical level of school performance, South Africa’s GDP would be 23 to 30% higher than it currently is. ‘Typical’ in this context implies average performance levels. How does South Africa then compare to international standards?

The Trends in International Mathematics and Science Study (TIMSS 2003) tested grade 8 students in 50 countries in maths and science. Of the 50 countries that participated, including 6 African countries, South Africa came last.

The Progress in Reading and Literacy Study (PIRLS 2006) tested Grade 4 and 5 children in 45 countries in reading literacy. Out of the 45 participating countries (including other middle income countries like Botswana and Morocco) South Africa came last. We should be concerned that 87% of grade 4 and 78% of grade 5 learners were deemed to be "at serious risk of not learning to read" according to this study.

On local ground, our Department of Education monitors performance annually. The 2014 Annual National Assessments (ANA) puts the national average of first additional language users in grade 9 at 34%, whilst the same grade accomplishes a national average of 13% in numeracy. How should we be prepared for these entrants to the job market by 2018?

The Global Competitiveness Report is a two-yearly international publication used to determine the attractiveness of a country for investors. It uses a comprehensive range of indicators impacting on economic efficiency. We have isolated those ratings amongst 148 participating countries reflecting educational standards. South Africa is rated 133rd for quality of Primary Education, 146th in terms of quality of the education system and 148th (last) for quality of maths and science education.

If we wish to aim for the Stellenbosch study prediction of an increase of 23 to 30% in the GDP/capita, typical levels should be directed at a rating position of 74 out of 148 countries. We considered studies linking adult literacy levels reflected in children’s performance. The PIRLS study collected information indicating that 75% of parents read one hour per week. We estimate that this probably equates to literacy performance at marginal levels in those parents. We can view these issues from different angles, but the bottom line conclusion is that Literacy levels in South Africa are far too low, and it is complicated by the language distribution of our colourful society.
Our Conclusion: Two choices?

The graph displays the three important thresholds of literacy. We have determined that in South Africa, the average English proficiency level equates to grade 7 or ABET 3 outcomes and is indicated by the curve peak in green. Considering that functional literacy implies having the basic literacy and numeracy skills in tact which will enable one to cope in life and the workplace, this seems a reasonable aim for performance in our society. It implies that the curve should shift to the right to peak at grade 9/NQF 1 level, as indicated using the lime coloured curve. First prize would however be to cross the Academic literacy barrier, enabling critical thinking and communication in the language of English, the purple curve in the graph.

The GDP/capita was measured at R70 819 in 2014. Using the argument of the Stellenbosch study, and calculating the conservative 23% increase, it is proposed that should the majority of English language users be able to cross the functional literacy barrier, R16 288 will be added to the per capita figure of R70 819, equating to R87 107 GDP/capita. In the collective, this is an increase of R873 billion in the total GDP for 2014. In other words, if average English literacy levels can increase by two grade levels, it will save the economy R873 billion in one year!

What will it cost? We have estimated that for less than R1 000 per person per month invested for one year in a part-time language development programme, English literacy levels can be increased by two grade levels. It however requires an integrated approach, customised to workplace application and supported virtually by a specialised language coach. It does not compare to the traditional ABET programme used as solutions thus far. It extends to levels beyond ABET and requires learner engagement and immersion engaging more sophisticated methods and technological resources.
Our Conclusion

The importance of Adult literacy development cannot be over emphasised. Studies show Adult Development Programmes...

- cost less than interventions in schools to change the quality of education
- have a quicker impact in growth
- improve children’s literacy and development opportunities
- improve the family’s welfare and ability to integrate with society
- may contribute to better work prospects – employment on the other hand enables better literacy proficiency
- enable between 18 -25% better earnings for those proficient in English
- will reduce the unemployment rate
- will improve national competitiveness!

We summarise the benefits of acceptable English literacy proficiency levels of South Africans to be an overall increase in:

- **Individual income potential** because of increased trainability and resulting employability,
- **Organisational efficiency and profitability** because of increased labour productivity and return on investment of talent development programmes,
- Macroeconomic indicators because of **increased economic growth, higher income potential** and **less unemployment**.
We have consulted the following literature

- A working paper of the department of economics and the Bureau for economic research at the University of Stellenbosch, 2006. The Costs of Illiteracy in South Africa.
- Paper commissioned for the EFA Global Monitoring Report 2006, Literacy for Life
- Johann van Tonder, Independent Economist.
- Statistics South Africa 2011 Census