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Functional competencies of Out-of-School Youth

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BACKGROUND

Guatemala is a country with a high proportion of young people. According to the National Statistics Institute (INE), 58% of the population is under 25 years old and 22.1% is between 15 and 24 years old. Furthermore, the National Survey on Living Conditions (ENCOVI, 2011) reports that 3,086,474 of the population is between 15 and 24 years old, of which 51.8% are females and 48.41% males. In 2011, there were 1,846,923 Out-of-School Youth (OSY; 16-24 years old) of which 54% were females and 46% males (ENCOVI, 2011). This research was carried out in the Western Highlands of Guatemala where 67% of the youngsters, between 15 and 24 years old, are OSY.

Literacy and numeracy are crucial for the educational and professional success of youngsters. We know that these skills change from childhood to adulthood and that the study of reading competency has evolved over time (Reimers y Jacobs, 2008). Also, the skills that readers need to carry out different tasks depend on the context and on its demands. For example, the skill required for reading a novel is different than the one we need for reading an informative flyer about vaccination. Some authors refer to this difference as reading to learn (de Beaugrande, 1984; Herber, 1978 in Kirsch & Mosenthal, 1990), and reading-to-do (Sticht, 1977 in Kirsch & Mosenthal, 1990). During adulthood, we read to learn and to do; this is what we know as functional literacy or reading competency (Reimers y Jacobs, 2008). Likewise, the mathematics skills required to solve calculations in engineering courses are not the same as the ones needed in the supermarket or for taxes estimation; the latter is an example of functional mathematics.

It is estimated that in Guatemala the literacy rate is 74% for males and 49% for females (INE, 2014). Although the literacy rate informs about this ability among the population, it tells little about the functionality of reading skills of citizens in daily life aspects. According to Bruneforth, the literacy rate might be subject to social desirability bias given that it is based on self-reports. That is, selecting between "yes, I can read" and "no, I can't read" might be influenced by social stigma (2009, p. 15). Additionally, literacy is measured as a dichotomy "I can read or I can't read"; however, it doesn't consider the extent to which the person can read or the ability continuum (Bruneforth et al., 2009).

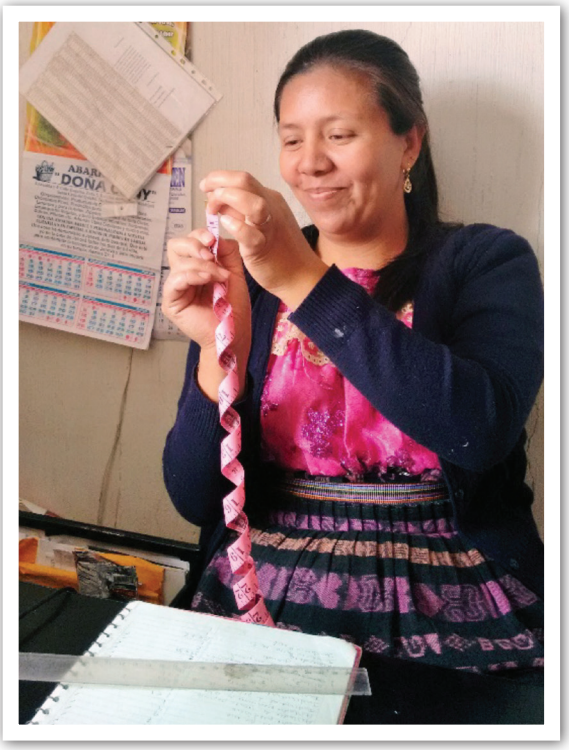


Figure 1. A woman using tape measure, COIPALMA, Quiché

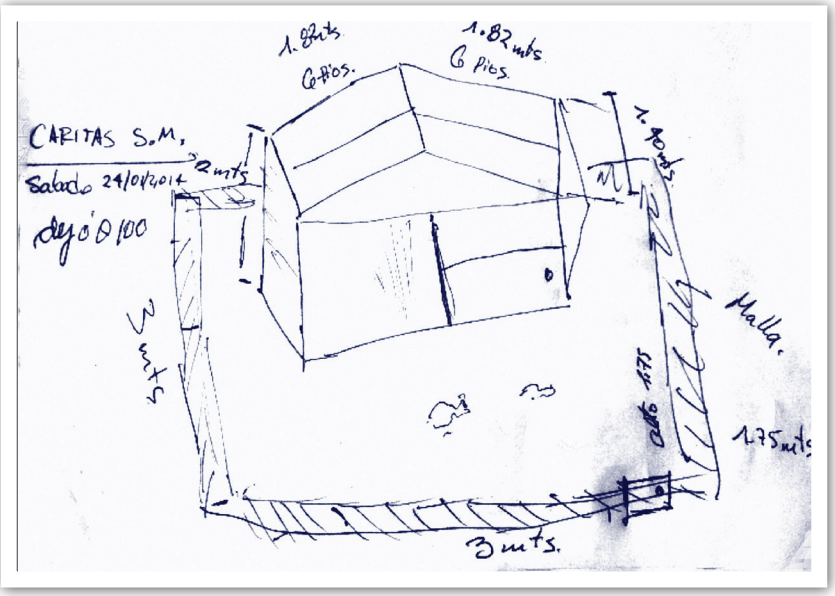


Figure 2. Chicken coop plan, Aserradero Gómez, San Marcos

Reimers and Jacobs (2008) state that the reading competency associated with literacy is acquired in 1st grade when decoding is learnt. Although this skill might be functional to take the right bus, it is insufficient to exercise citizenship.

In this study, it was decided to use the term functional literacy over literacy for two reasons. First, it is considered that the former describes better the construct than the latter. Second, given that in Guatemala, the concept of literacy has social stigma embedded, it is preferred to make no use of it.

From a functional perspective, it is essential that a skill has a practical end, therefore in this study the concepts of functional literacy, mathematics, and finance refer to the ability to use reading, writing, and mathematics to manage daily living and employment tasks. This means that, in this study, the functionality of the aforementioned skills is not explored from an academic perspective, which is usually divided into sub thematic areas. For example, mathematics is divided into: arithmetic, algebra, geometry, among others; reading is divided into: spelling, grammar, composition, among others. This study, instead of focusing on the traditional sub areas of literacy and numeracy, its focus was on the application of these skills, by youngsters, at work. The purpose of using the concepts of functional literacy and mathematics is twofold. On the one hand, it is aimed to bind together workforce training and labor demand. On the other hand, to identify training needs of youngsters.

TASKS CARRIED OUT BY YOUNGSTERS OF WESTERN HIGHLANDS

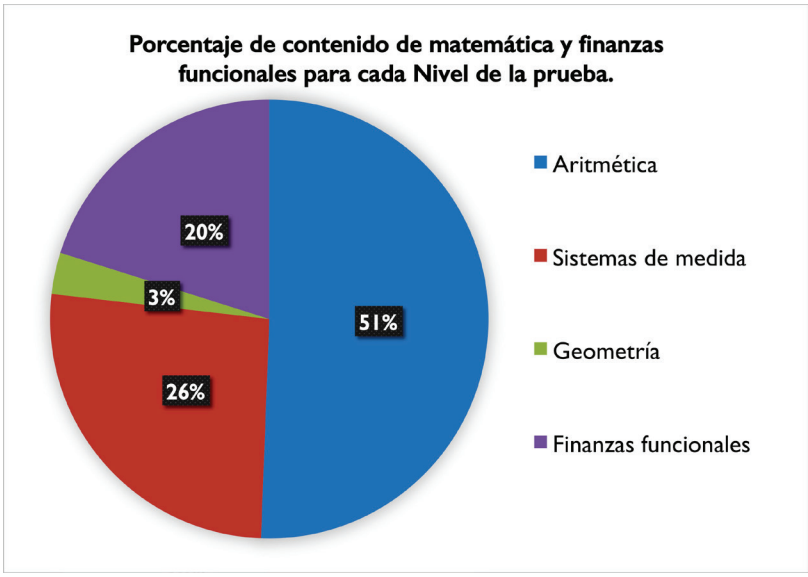
Local employers were interviewed about the tasks that require out-of-school youth to use skills of literacy, finance, and mathematics. Access to local employers was possible in collaboration with the various chambers of Guatemala, as well as organizations that work with youth in the Western Highlands. During the interview, the local employer was asked to provide a sample of the specific task that is carried out by the youngsters. The following results arose from an iterative analysis of the samples, taking into account the cognitive processes set up a priori and what was observed in each sample. The results are organized according to the thematic area of the tasks; however, the samples not necessarily encompass only one thematic area. In other words, a sample can include tasks of functional literacy, mathematics, and finance. This constitutes their functionality.

MATHEMATICS AND FINANCE TASKS

The tasks that require youngsters from the Western Highlands to use mathematics skills ranged from inventory data entry to solving problems and make a representation of its solution.

The most frequent task carried out by youngsters is arithmetic; mainly consisting on counting, adding, and multiplying. These tasks are regularly performed when completing invoices, placing orders, and for inventories. Other common tasks are the ones related with measurement systems. Youngster have to carry out tasks that require knowledge about time, length, capacity, and currency measurements. Some of these tasks appear in Figure 1 and 2. The tasks of measurement systems varied in their complexity; for example, as shown in Figure 1, youngsters have to use one of the measurement tools, such as tape measure. Another example appears in Figure 2, where youngsters have to use their knowledge to solve a problem, such as constructing a chicken coop. Figure 3 shows the percentage of functional mathematics and finance tasks identified.

A large percentage of the tasks identified by the employers require functional finance skills. The finance tasks ranged from calculating unit and total value, encompassing tax, credit, and budget knowledge, to legal knowledge.



Another task, that youngsters carried out frequently, was to estimate the cost and selling price of products. It was observed in contexts of entrepreneurship or own businesses.

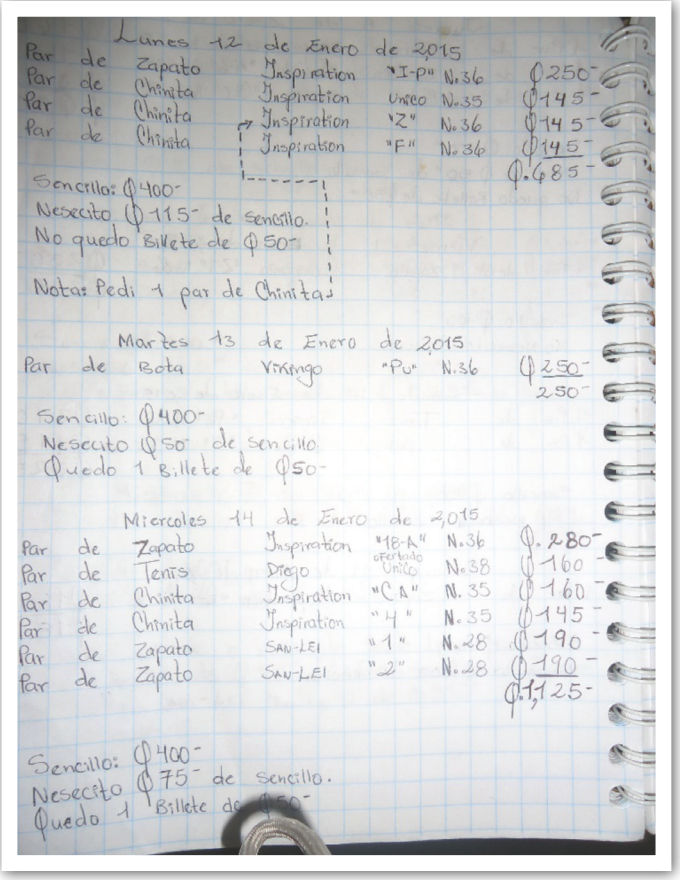


Figure 4. Daily sales report, shoe store, Quiché

Overall, functional finance tasks correspond to higher levels of thinking. These require not only finance knowledge, but also analysis and use of information.

WRITING TASKS

Writing was a common task performed by youngsters in their workplaces.

Tasks ranged from print legibly to describe, and even prepare a summary or synthesis of an activity. The main finding was writing accuracy. The contexts where youngsters work, require writing accuracy, for example when completing an invoice or a legal or accounting document. Youngsters have to write without spelling mistakes, erasures, and crossings out. In general, writing tasks require youngsters to remember and understand information, so that they can describe, synthesize, and summarize activities of their workplace.

READING TASKS

The reading tasks that youth of the Western Highlands carry out ranged from understanding a message conveyed by images, or read a series of images with few text, such as the one shown in Figure 6, to analyze a legal document.

The most frequent reading task consisted of locating information within a text to use it in the workplace. For example, finding the price or information of the products that are offered by the business. Figure 7 shows an example of a continuous text; this type of text was rarely found in this research. Youth of the Western Highlands usually have to read discontinuous texts, such as the one shown in Figure 6.

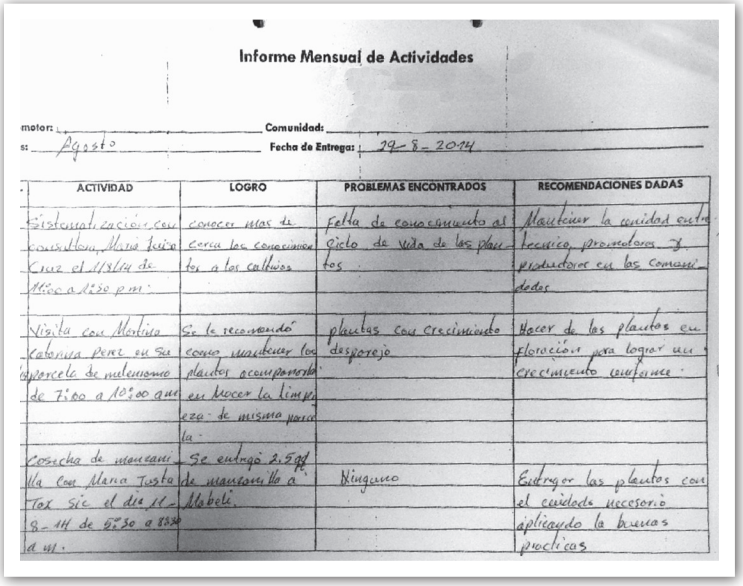
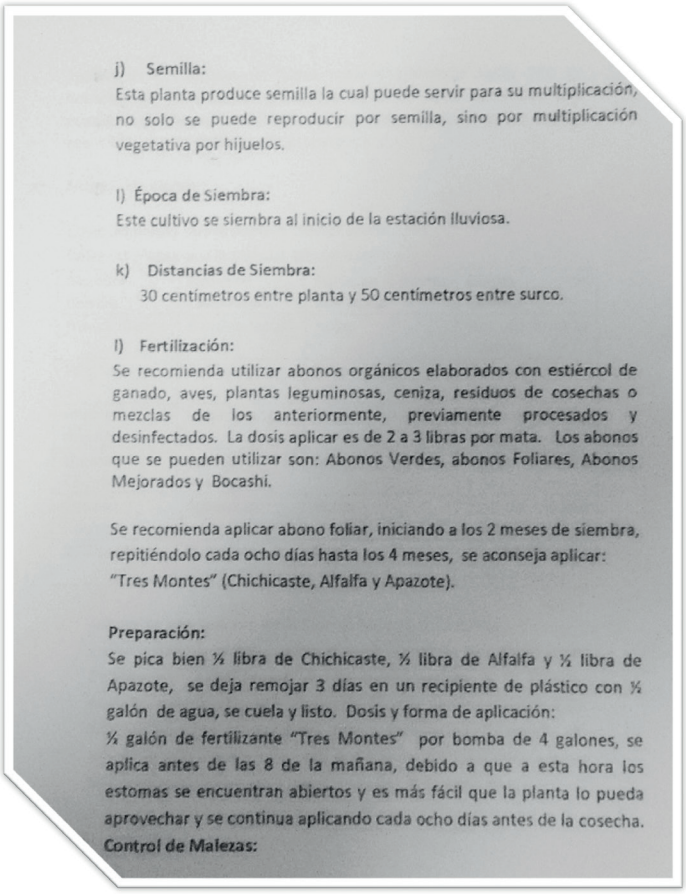


Figure 5. Monthly report, Laboratorios Mabeli, Totonicapán

Figure 6. Poster about radiator correct use, Shell, Huehuetenango

The use of vocabulary, both from the region as well as of the business itself, was one of the most frequent tasks. As shown in Figure 5, youngsters must use prior knowledge of their work to understand the text.



j) Semilla:
Esta planta produce semilla la cual puede servir para su multiplicación, no solo se puede reproducir por semilla, sino por multiplicación vegetativa por hijuelos.

l) Época de Siembra:
Este cultivo se siembra al inicio de la estación lluviosa.

k) Distancias de Siembra:
30 centímetros entre planta y 50 centímetros entre surco.

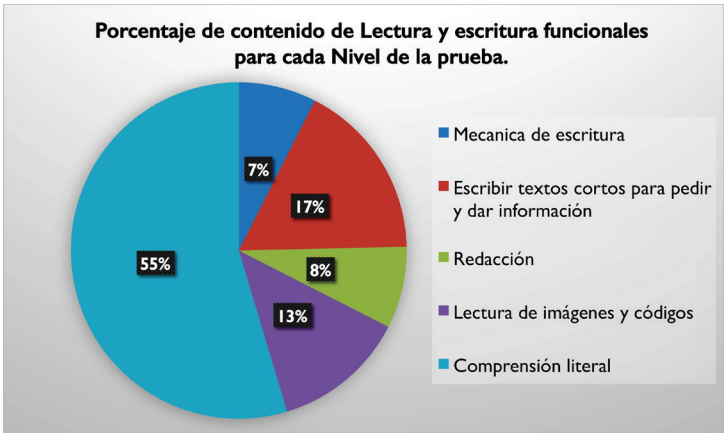
l) Fertilización:
Se recomienda utilizar abonos orgánicos elaborados con estiércol de ganado, aves, plantas leguminosas, ceniza, residuos de cosechas o mezclas de los anteriormente, previamente procesados y desinfectados. La dosis aplicar es de 2 a 3 libras por mata. Los abonos que se pueden utilizar son: Abonos Verdes, abonos Foliares, Abonos Mejorados y Bocashi.

Se recomienda aplicar abono foliar, iniciando a los 2 meses de siembra, repitiéndolo cada ocho días hasta los 4 meses, se aconseja aplicar: "Tres Montes" (Chichicaste, Alfalfa y Apazote).

Preparación:
Se pica bien ½ libra de Chichicaste, ½ libra de Alfalfa y ½ libra de Apazote, se deja remojar 3 días en un recipiente de plástico con ½ galón de agua, se cuela y listo. Dosis y forma de aplicación:
½ galón de fertilizante "Tres Montes" por bomba de 4 galones, se aplica antes de las 8 de la mañana, debido a que a esta hora los estomas se encuentran abiertos y es más fácil que la planta lo pueda aprovechar y se continua aplicando cada ocho días antes de la cosecha.
Control de Malezas:

Figure 7. Manual, Totonicapán

Overall, the reading tasks that are performed by youth of the Western Highlands require them to remember and understand information in order for them to carry out activities in their workplace.



Conclusions

- A high percentage (67%) of youngsters, between 15 and 24 years old, are out of school in the Western Highlands.
- Employment opportunities are restricted for out-of-school youth when they lack functional reading and mathematics competencies.
- The most frequent task of mathematics carried out by out-of-school youth that are employed in the Western Highlands is arithmetic; mainly consisting on counting, adding, and multiplying. These tasks are regularly performed when completing invoices, placing orders, and for inventories. Finance tasks require high levels of thinking, given that these require not only finance knowledge, but also analysis and use of information.
- Writing was a common task performed by youth of the Western Highlands in their workplaces. These ranged from print legibly to describe, and even prepare a summary or synthesis of an activity.
- For all tasks, accuracy was the most demanded characteristic by employers.
- The reading tasks that youth of the Western Highlands carry out ranged from understanding a message conveyed by images, or read a series of images with few text, to analyze a legal document. The most frequent reading task consisted of locating information within a text to use it in the workplace.

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