PREVENTING FUNCTIONAL ILLITERACY
IN MOTHER TONGUE TEACHING

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Abstract. Teaching mother tongue involves a high responsability as it represents a basic skill in learning achievements and social insertion. Therefore functional literacy becames the main concept in mother tongue education, especially when the mother tongue is also the learning tongue and the official language, meaning it involves long life learning skills. The debate on the functional literacy started around 1978, when the concept was specifically defined in an UNESCO General Conference. According to this document 15% of the world population is illiterate, and this should cause poor social and economic integration. Although the illiteracy could be improved in adulthood age, as different adult education programs show, it serves better for the child development if the literacy is enhanced during primary school time. One should distinguish between primary literacy and full or functional literacy. While the first means knowing the letters and being capable to read and write, the latter is a cultural shaped concept that points out the use of literacy into the social and economic life. In this paper we search for primary school methods and means in order to prevent functional illiteracy.

Keywords: functional literacy, illiteracy, primary school

In Romania, the functional illiteracy is not a very old concept, as it came out once PISA, PIRLS, TIMMS international tests have been introduced in order to to assess the efficacy of the Romanian learning system. The tests were related to reading and comprehension skills, numerical skills and basic science skills, and the results seem to be getting worse: *In Reading, Romanian students got a score of 428 points, down by 6 points compared to the 2015 result and 10 points compared to the 2012 result. In Mathematics, the performance of Romanian students declined even more, to a score of 430 points, down by 14 points compared to 2015 and by 15 points compared to 2012. In Science, Romania had a score of 426 points, down by 9 points compared to 2015 and by 13 points compared to 2012* as Romania-Insider writes.[1] In 2020, the situation got at it's worst, as 42% of the Romanian students seem to be functional illiterate. This leads to questions about literacy, what kind of school system should we use, how should we teach mother tongue, mathematics and sciences in order to get better results.

Literacy is defined as the ability to understand, evaluate, use and engage with written texts to participate in society, to achieve one's goals, and to develop one's

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[1] https://www.romania-insider.com/romania-pisa-2018-results

knowledge and potential[2]. As the mentioned document says literacy does not involve writing, concerning just the reading, comprehension, evaluation of the texts, more specifically, decoding the words' meaning and using it in the daily life. That means that literacy doesn't mean anymore only the letter recognition, word or simple sentence reading. That is why we should distinguish between primary literacy and full or functional literacy. While the primary literacy represents the ability of reading and writing, letter recognition, the "functional literacy represents a dynamic concept shaped by current cultural events."[3] The functional literacy is connected to the basic knowledge and its definition depends on this relation. Therefore there are many definitions of the functional literacy, each of them establishes the limit of the concept, like: *Literacy is much more than reading and writing; it is a way of communication, the acquisition of knowledge, the learning of language, the development of culture.* (Dijanošić, 2009, p. 28)[4] , a quite large definition of functional literacy.

In Romania, the functional literacy tends to be understood as a „short crisis in education" that can be outreached by using functional strategies of teaching, improving the learning system and the teachers' skills. Bulajic et al. show that this statement is not quite right. In an interdisciplinary team, they show that one can estabilsh connections between reading and writing, *and visual organization, mental spatial orientation, vigilance, divided atention, visual memory, and visual organization* (van Linden & Cremers, 2008)[5]. They also established *functional and anatomical cortical and neural differences between literate and illiterate individuals*, differences in *general cognitive functioning*, *cognitive abilities associated with natural language (verbal fluency, semantic and phonological coding of visual representations, phonological awareness, capacity of verbal working memory), numerical abilities (counting, number processing, basic calculus, and estimation of quantity), visual and spatial abilities (visual reproduction of simple two-dimensional objects, identification of objects in superposition, e.g., modified, extended, masked objects, and other abilities), different domains of memory*[6].

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[2]OECD (2013). OECD Skills Outlook 2013. First Results from the Survey of Adult Skills. Paris

[3] Bulajic, Aleksandar, Despotovic, Miomir, Lachmann, Thomas *Understanding functional illiteracy from a policy, adult education, and cognition point of view: Towards a joint referent framework*, Zeitschrift für Neuropsychologie, pp. 109 – 122.

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Specific linguistic skill are associated to the functional literacy: language comprehension, reading, graphical comprehension, naming, lexical usage, number reading etc. There are studies that show that *education and literacy training primarily affect the coherence and development of semantic (quantitative differences), phonological, and syntactic processing*. Thus latter research consider that functional literacy involves basic skills, knowledge, strategy of personal development, that means lifelong learning skills and problem solving. Dolean et al[7] also underline that functional literacy is associated to *reading comprehension is the product of decoding skills and language comprehension,* while language comprehension *delineates the meaning-based aspects of language, such as listening comprehension, vocabulary, syntax or the ability to make inferences*[8].

Florentina Sâmihăian[9] (2014) underlines that the inferences, the macrostructure processing, the achievement of the mental images are the basic skills for reading comprehension. Douglas Vipond (1980)[10] observes that the microprocessing and macroprocessing skills work as a network, using the working memory (short term memory and long term memory), and the comprehension is cyclic. But when the working memory cannot reinstain meaningfull proposition then the coherence of the text requires inferences and reorganisations: *the reader comprehends a passage by forming, piece by piece, a network representation of it. When it is not possible to attach a proposition to the network, processes that consume additional resources are initiate.* He states that microprocessing is similar to macroprocessing, as in microprocessing one uses sentences while in macroprocessing paragraphs are used.

Maria Guarnera et al.[11] also focuses on mental image connecting it to the school learning, writting and mathematics, in other words, to the key competences in early stage school. The paper undelines that mental image turns to be important in math studying. Other recent studies enhance the connection between written text comprehension and mental imagery. Adnan Y. Atoum and Abdullah M. Rezio find *significant positive correlations between all patterns of mental imagery and*

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[7] Dolean, D.D., Lervåg, A., Visu-Petra, L. et al. Language skills, and not executive functions, predict the development of reading comprehension of early readers: evidence from an orthographically transparent language. Read Writ 34, 1491–1512 (2021). https://doi.org/10.1007/s11145-020-10107-4

[8] Ibidem.

[9] Sâmihăian, Florentina, `O didactică a Limbii și literaturii române. Provocări actuale pentru profesor și elev", 2014, Grupul Editorial Art, București.

[10] Vipond, Douglas, Micro- and Macroprocesses in Text Comprehension, Journal of Verbal Learning and Verbal Behavior 19, 276--296 (1980)

[11] Maria Guarnera, Monica Pellerone, Elena Commodari, Giusy D. Valenti, Stefania L. Buccheri, Mental Images and School Learning: A Longitudinal Study on Children, in Frontiers in Psychology, 2019, https://www.frontiersin.org/articles/10.3389/fpsyg.2019.02034/full

reading comprehension in   general   and   all its domains (2018)[12]. The mental imagery is involved in improving vocabu1ary, attention to detai1, and recall, as Barbara Yarrington Doore[13] underlines.

Recent research (Dolean et al, 2020) connects the comprehension of the written text to the language skills, saying that improving the language skills could predict a better comprehension of the reading text later: *The strong effect of oral language skills suggests that intervention programs aimed to improve language skills could lead to an improvement in reading comprehension[14].*

The most important aim of the primary school Romanian Language and Literature curriculum is literacy skills training. It begins with short sentences reading and comprehension in the first year of literacy training, continues with the lecturing of short messages, then, in the third and fourth grade the curriculum's goals are to develop comprehension skills, as select information selection, significant information selection, simple inferences making. The goal of comprehension development continues in the secondary school grades, where the inferences grow more complex as the students are supposed to use the ideas of a text in order to develop critical reading skills, even to establish the speaker's intention in the act of communication. That means the students should be able to make three important operations: identification of the relevant information within the text, establishing conclusion by connecting text information to meaning, relating the information within the text to other information from past experiences or knowledge.

The cognitive processes involved in reading are recruitment, modification, coordination and automatization (Lachmann, 2018[15]), but the automatization can occur over several years of reading and exercise. We can establish four stages in training literacy: in the early stage of learning, the students are involved in letter recognition, then the whole-word recognition, sentences comprehension (micro-processing), and, in late stages, paragraphs comprehensions that lead to the text

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[12] Adnan Y. Atoum and Abdullah M. Rezio, Can Mental Imagery Predicts Reading Comprehension?, in Current Research Journal of Social Sciences, vol 1, nr. 1, 2018, https://www.researchgate.net/publication/328191117_Can_Mental_Imagery_Predicts_Reading_Comprehension

[13] Doore, Barbara Yarrington, "The Contribution of Mental Imagery to Performance in Specific Targeted Comprehension Skills" (1989). Education and Human Development Master's Theses. 990, https://digitalcommons.brockport.edu/ehd_theses/990.

[14] Dolean, D.D., Lervåg, A., Visu-Petra, L. et al. Language skills, and not executive functions, predict the development of reading comprehension of early readers: evidence from an orthographically transparent language. Read Writ 34, 1491–1512 (2021). https://doi.org/10.1007/s11145-020-10107-4

[15] Lachmann, Thomas, Introduction to Reading and Dyslexia: Perspectives from Cognitive Neurosciences, Linguistics, Psychology and Education (2018) in Reading and Dyslexia (pp.1-6), DOI:10.1007/978-3-319-90805-2_16.

comprehension. This requires coding and decoding skills, language skills, working memory, selective attention.

The model that this paper suggests starts from Dolean et al. assumption, that language skills are the most relevant in the early stages literacy. Therefore, the first phase in enhancing written text comprehension is improving the language skill, i.e. the language comprehension. Hence the teacher should refine the students' listening skills, using audio-texts: during this kind of lessons, the students should identify the main ideas, sentences, their connection one to the other, key-words etc; they could also rephrase or resume the text, or even draw some sketches showing the events from the text. The second skill they should improve in order to a better comprehension of the verbal message is the vocabulary: new words, new meanings, new relations between the words. This kind of activity could use either the audio-text, or the written one.

The next phase should be the written text, which might be related to the audio-text, so that the students should be aware of its `reality`. Reading sentences and decoding their meaning should be the most important activity. That means not only a few questions concerning the text, but one should read sentence by sentence and decode its ultimate meaning. For example, in a text like „Tezeu și Minotaurul", by Florin Bican, the students should read the first fragment by themselves, then one could ask the questions that train the comprehension: Who made the wife of Minos to fall in love with a magic bull? Why did the gods made Pasifae do such a thing? Who was Minos? How did the gods punish Minos? Who are the parents of Minotaur? What was the Minotaur like? And so on. Doing this, the students are trained to identify the precise information from a text. Then, in the next stage, they should make inferences, through questions like: Why was the Minotaur so threatening? Then, in order to enhance the comprehension, one could change the perspective: the students could select the sentences that show some facts from the text.

This kind of scenario focuses on the story and the character, more than on the technical aspects of the text, like the narrator, the kind of writing or some other extra-textual elements.

Another scenario could establish first the characters, their actions, their consequences. For example, the conversation could be guided in order to reach the following answers: There is a king, called Minos. He has a wife. His wife's name is Pasifae. Pasifae fell in love with a magic bull. Pasifae gave birth to Minotaur. This scenario is not complete without syntax knowledge, as the student should find out why did Pasifae fall in love with the bull or who made her fall in love. The next step could be discussing the syntax.

In the Romanian school, they don't teach like this: when they focus on the story, they identify the paragraphs, the main ideas, the time and the space, the main characters. Even when selective reading is done, it focuses on the main aspects of

the story. Therefore the mental image is hard to sketch, decoding skills are hardly trained.

The present scenario addresses the comprehension of the meaning based aspects of language: improving the language skills should help the reading skills. They can be improved by training the listening and the vocabulary skills. In the first batch of skills the first curriculum general competence is involved (Receiving oral messages in various communication contexts – third and fourth grades; Participating in verbal interactions in various communication situations, by receiving and producing the oral text – fifth to eighth grade). The specific competences ask for the theme, the basic or detailed information, emotions, nonverbal elements, resuming the text they listened, synthesizing the information, the communication intensions for fifty to seventh grade in the secondary school, but no specific comprehension competence for the oral text in the eighth grade; in the third and fourth grade the focus is on extracting information, inferences about the text or the word meaning, reporting irregularities. That means that the way of teaching is very much connected to the curriculum, as it focuses more on language training, reading or writing skills. But, as Dolean et al states, first of all the teachers should improve the language comprehension, in order to enhance comprehension and prevent illiteracy. The decoding skills are then simpler to improve, by exercise and different reading strategies.

In order to prevent illiteracy the teachers should take into account that language comprehension skills are as important as the decoding skills. The decoding skills tend to be well trained in Romania, but the language comprehension skills are less represented in the school curriculum and in the lessons. The latter Romanian Language and Literature curriculum (from third to eighth form) tend to give more space to language skills, but the focus is more on the producing the text than receiving and comprehending it. The teachers make the difference if the understand the importance of the language skill training in order to prevent functional illiteracy.

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