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Method for Developing an International Curriculum and Assessment Framework for Reading

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Summary

Background

This paper presents the methodology followed for developing a theoretical and methodological reference framework that supports the development of a Global Framework related to the reading competency and the efforts towards monitoring progress towards SDG 4.1.1:

4.1: By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.

4.1.1 Proportion of children and young people: (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex.

In order to achieve this goal, information was drawn from two different sources. Firstly, the components implied in learning how to read proposed by cognitive models, which have greatly contributed to our current understanding of reading acquisition were identified. Secondly, these were contrasted with what is proposed by national curricula from three different language roots (English, French and Spanish). The information coming from both of these sources allowed for the development of a common framework.

Defining Reading

Based on theoretical models as well as on the analysis of national curricula, a set of competencies related to learning how to read were identified:

1. Metalinguistic competency

Phonological awareness is considered in the Coding Scheme as a metalinguistic competency. Phonological awareness is understood as the ability to reflect on and manipulate the sounds of speech (words, syllables, intra-syllabic units, and phonemes) and it is considered as one of the most powerful predictors of reading acquisition, as its development is necessary to master the alphabetic code.

2. Reading competency

A set of core components, related to the linguistic and metalinguistic competencies, has been defined. These core components are usually grouped in two domains: decoding and comprehension. Decoding refers to the ability to associate the orthographic form of a word with its phonological form, where the orthographic form is given by the sequence of the graphemes. With the development of the reading competency, the decoding skills increase and become automatic. This allows for precision and fluency in the recognition of written words. Reading comprehension is the ultimate goal of reading, as it is the process by which one retrieves information from a written text, interprets it and even reflects upon it.

3. Linguistic competency

It includes three different domains: listening, speaking and vocabulary. This competency refers to the ability of retrieving and interpreting verbal information at the word, sentence and oral text levels. In order to include both receptive and productive skills the research team created the listening and speaking domains, to differentiate both aspects. The vocabulary domain appears because it is one of the variables that shows a stronger association with linguistic comprehension (Compton, Gilbert, Jenkins, Fuchs, Cho & Bouton, 2012).

Teaching how to read: identifying processes, knowledge and skills portrayed in national curricula from different language roots

The contributions made by cognitive theories and research have allowed for a relevant progress regarding the comprehension of processes, knowledge and skills that make up proficient reading. This has led to a revision of and reflection on teaching practices in schools that have been more than once questioned by international and national learning assessments. When analysing national curriculum pertaining to different orthographic systems (i.e. Spanish, English French), these are usually defined in terms of competencies. Competencies are understood as the application of knowledge that aids in the differentiation between basic and desirable learning (Coll & Marin, 2006). In the review of national curricula, the result is to establish, based on competencies, a set of domains and constructs that are required to efficiently learn how to read through formal schooling in three different languages. Languages, that as has been pointed out before, differ in reference to their degree of correspondence between graphemes and phonemes.

To achieve this result, firstly the research team defined and codified a set of domains and constructs that refer to processes, knowledge and skills involved in learning how to read. Secondly, they confronted that coding, by analysing differences and similarities with the study made of three national curricula for each of the language roots at three different stages of formal schooling. With this analysis they revised the code, in such a way that it would allow for the inclusion of all of the competencies and contents presented in the curricula without losing the cognitive model behind it. The resulting framework allows mapping other diverse national curricula and national assessments related to reading.

National Assessment Frameworks (NAFs)

In many jurisdictions teaching and learning intentions have shifted from a focus on inputs associated with educational access and moved towards **measuring specific outcomes** (Tedesco, 2013). As a result, there has been an inexorable shift towards testing to provide evidence of systemic educational effectiveness. Just as curriculum documents can be likened to educational intentions, **national and international assessment frameworks can be likened to jurisdictional testing intentions** (i.e., intended question types and scope). Assessment frameworks are outlines, therefore, that provide examples of task-types deemed to be of sufficient jurisdictional importance to warrant testing. As mentioned, scope of testable tasks always represent sub-sets of learning expectations defined in related curriculum.

Outcomes

The Global Framework is composed of four tabs. Tab 1 lists the domains, Tab 2 the sub-domains, Tab 3 constructs and Tab 4 sub-constructs. These descriptors in each tab provide details to help country understand the components of the Global Content Framework and a platform is developed to help country map its national assessment framework to this Global Content Framework.

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Method for Developing an International Curriculum and Assessment Framework for Reading

Ariel Cuadro¹, Ana Laura Palombo² and Carola Ruiz¹

¹Departamento de Neurocognición

²Departamento de Educación

Universidad Católica del Uruguay

Abstract

This report aims to present a theoretical and methodological reference framework that supports the development of a global framework related to the reading competency. The coding scheme seeks to allow for the mapping of national assessment frameworks and curricula related to this competency. The studies of reading acquisition, particularly from cognitive theories have identified the core knowledge and skills necessary to acquire the written language, as well as, the relevance that linguistic and metalinguistic competencies will have in learning to read. Based on this cognitive perspective a set of national curricula, from three different alphabetic systems (Spanish, English and French) at three stages of formal schooling, were analysed. The results from this study allowed for the codification of domains and constructs involved in reading competency development throughout formal schooling, as well as, the creation of a reference list that defines them. Therefore, the analysis criteria related to written language learning was unified based on a global, updated and evidence-based model.

Keywords: reading, teaching, curricula, common analysis framework

Introduction

After the World Education Forum held in 2015, a large number of countries and international organizations agreed to adopt the Education 2030 *Framework for Action* as a way of ensuring the completion of the Sustainable Development Goal four (SDG-4) which states **“ensure inclusive and quality education for all and promote lifelong learning opportunities for all”**.

As a way of contributing to this objective, UNESCO’s Institute of Statistics (UIS) has been aiming to describe the components that ensure a common framework that enables to monitor reading learning at a global level, while also respecting the individual characteristics of national curricula and assessments.

Its main objective is to develop a content reference list and a coding scheme that would allow for the mapping of reading national assessments. The above mentioned constitute a tool for the analysis of a large amount of national assessments as well as the identification of similarities and differences between what children are expected to learn in different levels of formal education.

In order to achieve this goal, information will be drawn from two different sources. Firstly, the components implied in learning how to read proposed by cognitive models, which have greatly contributed to our current understanding of reading acquisition, will be identified. Secondly, they will be contrasted with what is proposed by national curricula from three different language roots (Spanish, English and French). The information coming from both of these sources will allow for the development of a common framework in which to map national assessments.

1- Rationale

The information and communication technologies available demand the frequent use of written language. As stated by Bryant & Bradley (1998), from everything that has to be learnt at school, reading and writing is the most basic, fundamental and essential of them all.

Accomplishing the highest possible rate of achievement in this regard is without a doubt one of the greatest challenges for national educational systems. This is mainly due to the fact that its attainment depends on a complex process affected by a set of interrelated variables. The level of difficulty shown by students worldwide in mastering written language is clear evidence of this (Martin, Mullins & Kennedy, 2007; OCDE, 2016).

In the last few years, comparative data from different countries and writing systems regarding learning of written language has been obtained. This has led to the identification of the core knowledge and abilities for a universal model of learning on how to read (Frost, 2012; Share, 2008). This model includes alphabetic systems that vary on their orthographic characteristics. It also considers other writing systems as Arabic, and logographic systems such as the morpheme-based Chinese, which implies not only the memorization of characters but also the identification of semantic and phonetic radicals (Pugh y Verhoeven, 2018).

Analysing the variety of existing writing systems sheds light on the high complexity of the multiple dimensions of writing systems, having each of them different consequences on the development of efficient reading (Daniels & Share, 2018).

One of the main research results in this area has been that regardless of the existing differences between writing systems, it is necessary in all of them, to automatize both word recognition as well as lexical retrieval (Perfetti, 1986; Pugh & Verhoeven, 2018; Share, 2008).

In the case of alphabetic orthographies one of its characteristic features, and which will need to be automatized, refers to the grapheme-phoneme correspondence relationships. This means the consistency with which a certain letter/grapheme can be associated with a phoneme/sound, which could be rather simple (transparent) in some cases, for example Spanish, or much more complex (opaque) in others like English and French. In fact, the characteristics of this grapheme-phoneme relationship will mainly determine the difficulty for its acquisition. In a study conducted by Seymour, Aro & Erskine (2003) that compared students in their first year of learning to read from 14 European countries, they found that reading success at that level correlated with the simplicity or complexity of the writing system. For example, children learning Spanish were found to outperform those learning English and French.

At the same time, there is a need to define the most appropriate teaching methodologies (Alegría, Carrillo & Sanchez, 2005). Despite the progress made by the neurobiological and cognitive perspectives related to the understanding of the processes implied in learning how to read, discussions regarding teaching methodologies are still active in many countries (Castells, 2009). Moreover, the progresses made have not always been incorporated into the objectives and teaching practice that then transfers into student learning.

Analysing, as it is proposed by the UIS, the reading related aspects from different national curricula based on a theoretical model (cognitive perspective) and identifying commonalities and differences, contributes to making a proposal that guarantees the use of the written code and its understanding.

2- Learning how to read

2.1. From oral to written language

Oral and written language have similarities related mainly to the processes and structures that compose them, their arbitrariness, creative potential and productivity (Defior, 2000). Nonetheless, there are differences that make each of these processes a unique one. The relationship between the characteristics of the oral language and the written language ones determines how complex its acquisition is going to be. Therefore, reading processes depend on the reader's language and the writing system that codifies it (Perfetti, 2001).

Children's concept of language gradually evolves. While at the beginning their focus is on its communicative function, little by little they shift their attention to the formal aspects of language, showing their sensibility to the phonological properties of words. Proof of this comes from children's ability to distinguish the first sound of a word or a rhyme shown prior to reading acquisition.

This metaphonological knowledge enables reading acquisition, at the same time as it fosters the development of increasing levels of phonological awareness (Castles & Coltheart, 2004).

Therefore, learning how to read in alphabetic systems entails the explicit knowledge of the sounds that compose words, necessary requirement to achieve an automated knowledge and mastery of the grapheme-phoneme correspondence.

This explicit knowledge of sounds is the knowledge that the person has about the phonological properties of the language, that allows him to identify and discriminate words. It is the conscious ability to manipulate parts of words, known as phonological awareness. In other terms, a kind of conscious reflection process that allows to mentally isolate the units that compose speech.

Phonological awareness is a fundamental variable for written language acquisition, and it shows good predictive power. Its role in reading in different languages and cultural contexts has been extensively analysed and verified (Morais, 1998).

It is also important to consider that language characteristics impact on phonological awareness' development (Defior, 2008; Goswami, 2002). In opaque languages such as English, the development of phonological awareness is progressive and it maintains a

relevant role in the first years of formal schooling (Hatcher, Hulme & Snowling, 2004; Serrano & Defior, 2008). However, in transparent languages, phonological awareness shows an early development which in turn facilitates the acquisition of the alphabetic principle and consequently accelerates the development of phonological awareness (Jiménez, Venegas & García, 2007).

All in all, phonological awareness is strongly related to reading acquisition. The passage from oral to written language is strongly conditioned by this skill. This is the reason why its study and analysis is necessary for understanding reading. Metalinguistic abilities are the ones that will enable reading acquisition, this domain is then an intermediary between oral and written language.

2.2. Reading

Several are the variables related to achieving efficient reading skills. All of those variables have basically been categorized in two reading components: decoding and reading comprehension, considering this last one as the aim of reading and the first one as a necessary skill to achieve this aim.

The precision and speed of word recognition improves through the years of formal schooling (Stanovich, 1993) and shows a constant effect on reading comprehension. Therefore, the inefficiency on recognizing words will create difficulties in reading comprehension (Perfetti, 1985).

Even though sufficient evidence shows that word recognition does not explain all the possible difficulties found in reading comprehension (Perfetti, 2007), there is an agreement that these skills are a strong predictor of reading competency in the first years of schooling (Storch & Whitehurst, 2002) and play a key role during the process of learning how to read.

Automatic decoding implies the mastery and automation of grapheme-phoneme correspondences, mechanism by which phonological sequences are attributed to orthographic sequences that blend into a word (phoneme blending). In reading acquisition, this last mechanism allows for the progressive development of an orthographic lexicon that stores the representation of written words, which can then be directly identified at a low cognitive cost (Share, 1995; 1999). Fluency in reading presupposes precision and speed in word recognition which differentiates struggling readers from normally achieving ones (Shany & Share, 2010).

Learning how to read is more than just recognizing words. Reading comprehension presupposes the construction of multiple levels of meaning representation, which implies synergy and interaction of different processes (Verhoeven & Perfetti, 2008).

These result in the ability to retrieve information from a text, as well as, interpreting it by integrating the information with prior knowledge to make inferences and finally critically reflecting on that information (Pressley, 1998).

A good reader not only has to be able to understand the explicit information on a text, even though sometimes this is enough to successfully accomplish what is asked of him. He also has to be able to go into a deeper level in which he integrates the information given by the text with his prior knowledge, creating a situation model that is inferentially constructed in the interaction between the knowledge that the person has about the world and the text.

Kintsch & Rawson (2007) suggest that the reader creates a personalized mental representation of the text and distinguish three different levels of processing in this representation. The first one, known as linguistic processing refers to the semantic knowledge of words. The second one, microstructure, implies the representation of larger parts of the text, at the sentence level, beyond the meaning of isolated words. The third level, macrostructure, entails a representation of the general content of the whole text.

During the first school years, the acquisition of vocabulary (Burgoyne et al., 2009 in Clarke, Truelove, Hulme & Snowling, 2013) and oral comprehension skills are valuable predictors of future reading comprehension skills. Considering that linguistic competency allows for the interpretation of verbal information at the word, sentence and text level (Gough y Tunmer, 1986).

In the same fashion, metacognitive strategies, such as monitoring and inhibiting irrelevant information to detect important ideas are fundamental to achieving deep levels of reading comprehension (Clarke et al., 2013). Similarly, the possibility of making inferences, this is the ability to generate ideas that are not explicit in the message and that are built by the reader, through the use of its own mental representations, are also relevant to comprehension (Oakhill, Cain & Bryant, 2003).

Another type of knowledge that a person needs to understand a text is the one referred to the structure or grammar of texts. Knowing different types of texts allows for the organization

and classification of the information presented in them, based on their internal structure (Van Dijk & Kintsch, 1983).

Reading then, implies the development of a series of linguistic and metalinguistic competencies that allow for word recognition and reading comprehension, which mostly require of explicit teaching for its development.

It is not a coincidence that one of the most influential scientific reports on this topic, the one presented by the National Reading Panel (2000) recommends the inclusion of five key components in the development of a successful intervention: phonological awareness, phonics (grapheme-phoneme correspondences), reading fluency, vocabulary and reading comprehension. A vast amount of studies have replicated these results providing evidence of its findings and recommendations (Diamond, Justice, Sieglar, & Snyder, 2013; Slavin, Lake, Davis, & Madden, 2011; Tran, Sánchez, Arellano, & Lee-Swanson 2011).

3- Teaching how to read: identifying processes, knowledge and skills portrayed in national curricula from different language roots

The contributions made by cognitive theories and research have allowed for a relevant progress regarding the comprehension of processes, knowledge and skills that make up proficient reading. This has led to a revision of and reflection on teaching practices in schools that have been more than once questioned by international and national learning assessments.

When analysing national curriculum pertaining to different orthographic systems such as Spanish, English and French, these are usually defined in terms of competencies, even though each has its own characteristics regarding organization, hierarchy, and components defined. Competencies are understood as the application of knowledge that aids in the differentiation between basic and desirable learning (Coll & Marin, 2006). An example of this can be found in Ecuador's curriculum, which stated indispensable basic skills and distinguishes them from desirable ones.

In the review of national curricula it is possible to identify competencies defined by area. Being either transversal or disciplinary (as in Quebec's curriculum), by academic area, as it is defined in Paraguay's curriculum, or by broad competencies, areas, and levels, as in Guatemala's. At the same time, choosing a competencies-based curriculum implies

establishing abilities, skills and attitudes that are needed in order to be able to apply the knowledge. The different curricula state these and at the same time define assessment modalities with achievement indicators, and methodological guidelines for teachers. Benchmarks are also indicated that enable the identification of learning progression in the curricular matrices.

The result is to establish, based on competencies, a set of domains and constructs that are required to efficiently learn how to read through formal schooling in three different languages. Languages, that as we have pointed out before, differ in reference to their degree of correspondence between graphemes and phonemes. There are more consistent languages in that relationship such as Spanish, and less consistent ones such as English and French, where the same grapheme can be read in different ways.

To achieve this result, firstly we defined and codified a set of domains and constructs that refer to processes, knowledge and skills involved in learning how to read. Secondly, we confronted that coding, by analysing differences and similarities with the study made of three national curricula for each of the language roots at three different stages of formal schooling. With this analysis we revised the code, in such a way that it would allow for the inclusion of all of the competencies and contents presented in the curricula without losing the cognitive model behind it. The resulting framework allows mapping other diverse national curricula and national assessments related to reading (figure 1).

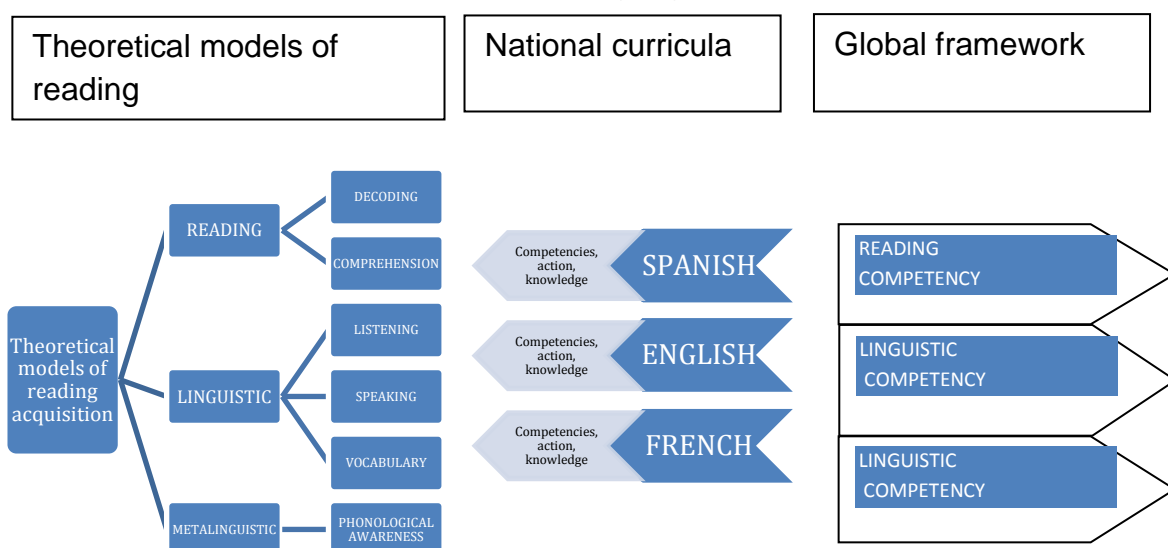


Figure 1. Method used for creating the coding scheme and reference list of the domains, sub domains, constructs and sub constructs involved in learning how to read.

3.1. Metalinguistic competency

As it has been stated before, the metalinguistic and linguistic abilities are associated with reading but are not specific to written language as they respond to language in general. Each one of these domains includes a set of sub domains, constructs and sub constructs that are developed through explicit teaching which is more or less emphatically portrayed in the different national curricula and that also responds to the orthographic characteristics of the language as well as curriculum designs. Considering these differences is that we have decided to leave phonological awareness as a metalinguistic competency, in between oral and written language but not as a part of any of the two.

Phonological awareness is understood as the ability to reflect on and manipulate the sounds of speech (words, syllables, intra-syllabic units, and phonemes) and it is considered as one of the most powerful predictors of reading acquisition (Ducan et al., 2013), as its development is necessary to master the alphabetic code (Villarón, 2008). It is a skill that is gradually developed and its universal sequence goes from the largest to the smallest phonological units (Defior, 2014). Within phonological awareness, depending on the units being manipulated four categories can be differentiated: semantic awareness (words), syllabic awareness (syllables), intra-syllabic awareness (rhyme and onset) and phonetic awareness (phonemes).

Several studies have found that the impact of phonological awareness through schooling varies according to the orthographic transparency. In English, for example, its relevance for the development of reading precision and fluency is greater than in transparent orthographies like Spanish (Defior, Jiménez-Fernández, Calet & Serrano, 2015).

While studying the different curricula it could be noticed that a greater relevance is given to phonological awareness by English speaking countries than by Spanish speaking countries, French speaking countries being in between. Moreover, the Bahamas national curriculum clearly emphasized phonological awareness, and gave great detail regarding the expected actions students should be able to perform. As an example, distinguishing letters from words was added to the coding scheme due to its presence in this curriculum.

In every studied curriculum, the need to establish the phoneme-grapheme correspondence is stated, as well as the knowledge of graphemes. Phonological awareness is basically dealt with during the first years of schooling, based on the analysis of syllables and sounds and

their position in words. Quebec's curriculum explicitly defines a pedagogic sequence to be followed in this domain, starting with phonological awareness, and then connecting it with the graphic representation of the phoneme-grapheme correspondence, finally dealing with orthographic conventional writing.

3.2. Reading competency

For teaching how to read, research focusing on evidence-based teaching (Camilli, Vargas, Ryan, & Barnett, 2010; Chard, Ketterlin-Geller, Baker, Doabler, & Apichatabutra, 2009; Gersten et al., 2009) has defined a set of core components, related to the linguistic and metalinguistic competencies needed. These core components are usually grouped in two domains: decoding and comprehension.

Decoding refers to the ability to associate the orthographic form of a word with its phonological form, where the orthographic form is given by the sequence of the graphemes. Formal learning of reading starts with the knowledge of letters and their respective sounds (alphabetic principle), this initiates the application of the grapheme-phoneme correspondence, this means, the mechanism by which we assign phonological sequences to orthographic sequences that blend in one word (phoneme blending). Even though most curricula mention decoding at some point, some of them such as Micronesia's deal with it as a separate domain from comprehension, while others such as Paraguay's include it into comprehension without considering it in depth. Finally, Ecuador's curriculum explicitly differentiates teaching the alphabetic principle from teaching how to read.

With the development of the reading competency, the decoding skills increase and become automatic. This allows for precision and fluency in the recognition of written words. Fluency is not a synonym of speed; it is also composed by tone, expression and volume (prosody) in the identification of words in sentences and texts (Calet, 2013).

Regarding this domain, both national curricula and the cognitive model mostly agreed on the relevant components to take into consideration. A difference observed between the curricula was the emphasis on developing sight-read words both in French and English curricula which did not appear in Spanish speaking countries. This difference can be clearly explained by the orthographic transparency of Spanish, language in which sight word reading does not play much of a role. Another interesting finding in this domain appeared in

Paraguay's curriculum by considering correct body posture as well as having a dialogue attitude as important characteristics of fluency in reading.

Reading comprehension is the ultimate goal of reading, as it is the process by which we retrieve information from a written text, we interpret it and even reflect upon it. Retrieving, interpreting and reflecting constitute different levels of depth in which we can interact with a text to build meaning. These entail different levels of knowledge and skills (Sánchez, 2010), such as knowing the meaning of words, text structures, discourse integration, inference making, comprehension and monitoring strategies (metacognition) (Clarke et al., 2013; Kintsch & Rawson, 2007; Nation, 2007; Perfetti, 2007).

All of the curricula analysed devote an important section to comprehension, making explicit the need for the development of comprehension strategies. Even though the way in which each curriculum classifies the strategies is different, they all include strategies related to paratextual information, explicit and implicit information and metacognitive strategies to monitor and regulate comprehension. The most significant input made by curricula in this domain refers to the creation of an *identify* sub domain, which was not initially thought of. This sub domain mainly focuses on aspects of reading comprehension that could be considered to be independent of the meaning of the text. In this sense, identifying the type of text could be in some cases accomplished without reading, by looking at the text's layout. A similar situation occurs with identifying contractions, compound words, abbreviations, etc. which can be done by looking at the words without actually reading the text. In this way, it could be done at a simpler level than what the retrieving sub domain entails.

3.3. Linguistic competency

Linguistic competency includes three different domains: listening, speaking and vocabulary.

The linguistic competency involves processing verbal stimuli from the synergy and interaction of different processes with cognitive, linguistic and socio educational variables (Kintsch & Rawson, 2007; Verhoeven & Perfetti, 2008). It refers to the ability of retrieving and interpreting verbal information at the word, sentence and oral text levels. In order to include both receptive and productive skills we have created the listening and speaking domains, to differentiate both aspects.

The relevance of linguistic competency for reading has been broadly studied, especially from the Simple View of Reading Model developed by Gough & Tunmer (1986). This highly

accepted model (Clarke et al., 2013) proposes that reading comprehension is the product of decoding and linguistic competency. At the same time, differences in the incidence that each variable has during the years of schooling have been pointed out. While in the first years decoding would have the main role, later on it would be taken by the linguistic competency (Florit & Cain, 2011). Other studies have shown the impact of the linguistic competency on reading comprehension (Beach, Bocian, Flynn, Sánchez & O'Connor, 2013), and also the relationship between specific language disorders and difficulties in written language learning (Wijnen, De-Bree, Van-Alphen, Jong & van-der Leij, 2015). In this regard, Ecuador's curriculum states that even though the strong relationship between oral and written language has been repeatedly demonstrated, it is also important to consider that oral language, is relevant in itself, and not only due to its relationship with reading. In reference to this, Bahamas' curriculum sets three sub-goals for language arts education. One of them refers specifically to listening and speaking, while the other two combine oral and written language skills to create a sub-goal related to writing and speaking and another one to reading and listening, explicitly stating the relevance of the relationship between oral and written language.

The vocabulary domain appears because it is one of the variables that shows a stronger association with linguistic comprehension (Compton, Gilbert, Jenkins, Fuchs, Cho & Bouton, 2012), having its explicit instruction an incidence on reading comprehension (Kamil, Borman, Dole, Kral, Salinger & Torgesen, 2008).

While we have decided to call it linguistic competency the curricula talk about listening, speaking, presenting, viewing (Bahamas), listening and speaking (Micronesia), oral communication (Ontario and Ecuador) among others. However they all include both productive and expressive skills, which we mention as listening and speaking. Moreover, differences arise between curricula regarding vocabulary. Some of them such as Bahamas include it into reading, while others such as Micronesia's considers it to be transversal to all of the domains. While we understand that vocabulary is transversal to both oral and written language we have decided to include it into linguistic competency but as a separate category than listening and speaking, as it was considered it would be clearer from the coding's perspective. Related to this competency, various curricula refer to non verbal language, conventions or cues. Moreover, Ecuador's, the Republic of Congo's, Ontario's, Guatemala's and Paraguay's national curricula emphasized the relevance of linguistic variations and expressions that are characteristic of the area. Furthermore, Ontario's

curriculum while discussing both vocabulary acquisition as well as oral comprehension repeatedly mentions the use of images as a key aspect.

4- Procedure followed to create the global framework

Based on theoretical models as well as on the analysis of national curricula the reference list and coding scheme was constructed. The Learning Explorer tool developed by the Australian Council for Educational Research was also considered.

In this sense, we identified a set of competencies related to learning how to read and established the domains, sub-domains and constructs which these models considered relevant for written language acquisition. The following step was to take the national curriculum (of different countries from three language roots: Spanish, English and French, and try to map them into the different categories. The curricula selected were the ones of Guatemala, Ecuador and Paraguay (Spanish), Micronesia, Ontario-Canada and Bahamas (English), Republic of Congo, Quebec-Canada and Belgium (French).

As a result of this analysis, the reference list and coding scheme was adjusted, which we present in a schematic format below.

Competencies	Sub domains	Constructs
Reading	Decoding	Alphabetic principle
		Precision
		Fluency
	Comprehension	Identify
		Retrieve
		Interpret
		Reflect
	Metacognition	
Linguistic	Listening	Retrieve
		Interpret
		Reflect
	Speaking	Form
		Content

		Use
	Vocabulary	Acquire new words
		Recognize
Metalinguistic	Phonological awareness	Distinguish
		Blend
		Generate words
		From
		Segment

Moreover, expected learning outcomes at three different points of formal education (after 2-3 years of formal schooling, after 7 years of formal schooling, after 10 years of formal schooling) have been established for each of the sub constructs of the reading, linguistic and metalinguistic competencies. These learning outcomes represent the average expectation and have been designed based on diverse set of documents: national curricula from different countries and languages, the Reading Learning Explorer designed by the Australian Council of Educational Research and international assessment frameworks such as TERCE and PISA.

In the first level, students are expected to know all the necessary symbols to be able to read. Their level of automaticity depends on the transparency of the language. At this stage they are able to read and understand explicit information, comprehend the main idea of a text when it is explicitly stated and make local inferences by connecting explicit information with previous knowledge.

In the second level, the students are expected to be able to read almost every word in their language increasing their fluency. At this stage they should be able to identify specific explicit information in a diverse variety of texts, recognize the main idea of a text and differentiate it from secondary ones, and make local inferences by relating explicit or implicit information with previous knowledge.

Finally, in the third level, students are expected to be fluent readers. They can identify implicit and explicit information, relate information from different parts of a text in order to construct its main idea as well as make global inferences by integrating explicit and implicit, specific and global information from different parts of a text or from different texts.

5- Uses and users

The global framework can be used by jurisdictional or national bodies, educational institutions or organizations as well as by international agencies. In all cases possible uses include mapping jurisdictional and/or national curricula, mapping national or international assessment frameworks and assess agreement between curricula and assessment frameworks.

5.1. Mapping curricula

National bodies could be interested in comparing curricula across jurisdictions or with other countries. In these cases using the reference list and coding scheme could act as a framework by which to guide the comparison. Furthermore, mapping curricula across grades could aid understand the evolution of the relative weight that each competency, sub-domain and construct has through children`s formal education. In the case of educational institutions or organizations they could be interested in comparing their educational proposal with the national or jurisdictional curriculum.

In the case of international agencies, mapping different countries curricula could aid in differentiating which aspect of teaching to read are common and which country-specific. Moreover, it may help to understand the process of reading acquisition and teaching how to read in different languages.

5.2. National Assessment Frameworks (NAFs)

For national bodies, mapping assessment frameworks may give a clearer picture as to which aspects of learning to read are being assessed at different points of formal schooling. Moreover, it may allow for the comparison to either different jurisdictions' or countries' assessment frameworks.

In the case of educational organizations and institutions the global framework could be used to compare their own assessments either with what is proposed in the national or jurisdictional assessment framework or by international agencies.

International agencies could use the global framework to compare and contrast national assessment frameworks throughout regions and languages. This comparison could aid the development of international assessment frameworks.

5.3. Curricula and National Assessment Framework Agreement

National bodies after mapping both curricula and assessment frameworks can assess the level of agreement between what is taught and what is assessed.

Educational organizations and institutions can map their educational proposal or curriculum and the proposed assessments in order to establish their level of agreement.

Finally, international agencies may need to make curricula-NAF agreement comparisons across languages or regions, which may in turn help advise national bodies on both curriculum and assessment development.

6- Structure of the global framework

The spreadsheet is composed of six different tabs.

In the first one, named “Competencies-Reference List” you will find the three competencies considered (Reading, Linguistic and Metalinguistic) and its respective domains, constructs and sub constructs. This is the tab which you will use for mapping.

Then, tabs 2 to 4 refer to one competency each and are named accordingly. In each of the tabs you will find descriptions and examples of each of the sub constructs that correspond to that competency. When in doubt while mapping, return to these tabs and check which of the descriptions best fits the item you are trying to code.

If you are interested in coding more than one assessment framework in the same spreadsheet you can create as many tabs as you need and copy the Competencies-Reference List into them.

The fifth and sixth tabs have examples of a NAF that has already been coded.

6.1. Coding instructions¹

1. When given the National Assessment Framework (NAF) read it completely.

¹ These instructions are accompanied by tutorial videos regarding both a description of the reference list and coding scheme, as well as, an example of mapping a national assessment framework. These videos refer to a simplified version.

2. Select one item at a time. Consider if it corresponds to the reading, linguistic or metalinguistic competency.

3. After making this decision study how this competency is structured. For example, in the case of reading competency you will note that there are two main divisions (they are numbered 1.1 and 1.2): Decoding and Reading Comprehension. Taking the item from the NAF, ask yourself whether this item reflects decoding (doing grapheme-phoneme correspondence, reading words, etc.) or reading comprehension (identify types of texts, retrieve information, make inferences, give an opinion, etc.).

4. If in doubt go to the competency-specific tab and read the descriptions and examples. This column provides an idea of the scope of each option. Make sure that the item you have meets the criteria. Once you have located an appropriate sub construct for your item add it to the Competencies-Reference List tab accordingly.

a. If none of the sub constructs correspond with the item, then map it under the “other” category of the corresponding construct and add as much information as possible.

b. In the event that the NAF item you have corresponds to more than one option, duplicate appropriate parts over the respective options in the Reference List.

5. Systematically analyse and map each of the items in the NAF over the three competencies.

7- Conclusion

The aim of this task was to develop a global framework that would allow for the mapping and subsequent comparison of the components involved in learning to read in different countries. This was performed based on the contributions made by theoretical models and research on reading acquisition, particularly from the cognitive perspective in interaction with the information provided by the national curricula of nine countries.

In this sense, it is important to consider that there has been a change in the conceptions that are at the base of curriculum design. At the present time, in which a change in

educational policy is necessary, teaching and learning processes that respect and adapt to both students' and teachers' social, racial, cultural and gender characteristics are of the essence.

Therefore, curricula nowadays are understood as the construction of a product that is oriented to define "the indispensable knowledge, essential abilities and most important values that school needs to prioritize and which are in fact, the fundamental learnings that need to be ensured" (Amadio, Operti & Tedesco, 2014, p.1). At the foundation of this definition is the concept of competency, which includes the learnings necessary to be able to face the current social demands both in their own society and their insertion in a globalized world.

Nonetheless, it is relevant to consider that not all countries have adopted this vision yet. Hence, the analysis conducted combines competency-based curricula, and others that favour a content based vision. A third type of curriculum found are in between of these, they do not state competencies, but create a list of learning objectives related to different contents. Even though, competency-based curricula have not generalized, it still seemed as the adequate base from which to perform this task as it is the most updated one related to teaching and learning.

"We live in an interconnected world in which we face common challenges, reason why a curriculum that only accounts for national needs and priorities is not perceived as convenient nor sufficient anymore" (Amadio et al., 2014, p.3). A broader perspective enables experiential, model and curriculum development knowledge that allows for progress related to designs that respond to international criteria without losing each country's essence.

This is clearly seen in the comparison of national curricula analysed, being there more similarities than differences between them, without finding contradictions. We consider that both the reference list and coding scheme favour the comparison of learnings between different countries, which will in turn facilitate, as Amadio et al., (2014) suggest, the possibility of educating for a globalized world.

The work done was based on this perspective, by trying to unify criteria related to written language learning that enable to find the key components of these processes that take place in each of the countries, within an evidence-based, updated cognitive model.

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