UNIVERSIDAD DE QUINTANA ROO

DIVISIÓN DE CIENCIAS POLÍTICAS Y HUMANIDADES

Validation of a scale to assess multiple document comprehension teaching and testing practices in English in bilingual middle schools
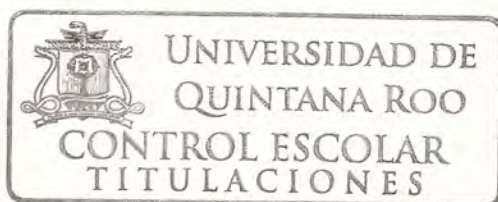
Tesis

Para obtener el grado de
Licenciada en Lengua Inglesa

PRESENTA
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Chetumal, Quintana Roo, México, octubre de 2019

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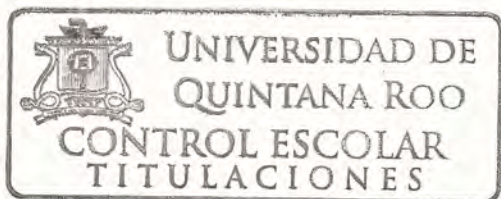
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ABSTRACT

Nowadays, literacy is far from only knowing how to write and read, it extends to a process of "meaning-making", mostly present in secondary and post-secondary school as stated by Colombi & Schleppegrel (2002). Due to the extensive number of texts and information that students are required to read in secondary and post-secondary contexts, multiple-documents literacy has been added to the catalogue of competencies students are to develop. In Mexico, multiple document comprehension has been present in the middle school curriculum since 2011 (Secretaría de Educación Pública [SEP], 2011b); thus, the need to integrate it to bilingual instruction. Overall, the importance of multiple document literacy is not equal to the amount of research that has been done on the topic, particularly when it comes to its application in bilingual middle schools and in relation to teaching and evaluation practices. The general objective of this study is to design and validate a scale to assess multiple document comprehension teaching and testing practices of teachers at bilingual middle schools. The study describes the design and validation of the scale based on the methodology proposed by Santaolària and Doval (2003). The Sociocognitive Interactive Model of Ruddel and Unrau (1994) and the Document Model Theory (Perfetti, Rouett, and Britt, 1999) functioned as the main theories to support the dimensions of the scales. The participants of the validation of the scale were 293 middle school teachers from schools located in the state of Quintana Roo, Mexico. This study provides a data collection instrument to an area of study that has scarcely been explored in Mexico and Latin America.

CHAPTER I. INTRODUCTION

This dissertation is part of a broader research project whose main objective is to describe and explain the teaching of multiple document comprehension and the practices of formative and summative evaluation in middle education in relation to contextual and individual variables (Vega, Perales-Escudero & Correa, 2019). The research project was titled *Prácticas de enseñanza y evaluación de la comprensión lectora de múltiples fuentes en educación secundaria: un estudio mixto* and was led by Moisés Damian Perales Escudero, Ph.D. and Norma Alicia Vega Lopez, Ph.D. The project was funded by the National Council of Science and Technology (CONACYT) and the National Institute for Education Assessment (INEE). It was approved on October 5th, 2017 and registered as Project 289392. The final report of the project was presented on July 1st, 2019 and all the data and findings of this dissertation are a part of its parent project and can be used by the Principal Investigators.

The research project was divided into two stages in order to simplify its development. Within the first stage, the objective was to design and validate a scale to characterize multiple document comprehension teaching and evaluation practices in middle schools in order to analyze the relation between the contextual factors and multiple document comprehension teaching and evaluation practices. The objective of the second stage was to administer the scale to a broad sample of middle school teachers from two states of the country.

This thesis study pertains to the first stage of its parent project and aimed at accomplishing the design and validation of one part of the scale only. Another important remark is that this thesis included exclusively the sample obtained within middle school teachers from the state of Quintana Roo. It is important to state that although this dissertation is aimed at developing a scale targeted at bilingual middle school teachers, the sample size needed to validate the scale was impossible to reach; therefore, teachers from all types of middle schools were taken into account for the validation of the scale. However, the sample still included bilingual middle school teachers and English teachers, which renders the scale valid to be administered to the target population of this study.

Thus, the objective of this study was to design and validate a scale to assess multiple document comprehension teaching and evaluation practices of English teachers at bilingual middle schools. This study is organized as follows: first, the background and the rationale are presented;

then, objective and research questions are introduced. Last, a brief description of the significance of the study is presented.

1.1 Background

Literacy has become a constant topic in today's pursuit to educate competent students in all levels of education. Nowadays, literacy is far from only knowing how to write and read; it extends to a process of "meaning-making", mostly present in secondary and post-secondary school, as stated by Colombi and Schleppegrel (2002). Due to the extensive number of texts and information that students are required to read in secondary and post-secondary contexts, multiple documents literacy has been added to the catalogue of competencies students are to develop. Bråten and Strømsø (2010) establish that "multiple-documents literacy concerns the ability to locate, evaluate, and use diverse sources of information for the purpose of constructing and communicating an integrated, meaningful representation of a particular issue, subject, or situation" (p.635)

Mexico is not alien to the development of multiple document literacy; the 2016 Educational Model states that it is necessary to promote an adequate environment for students to acquire the abilities to manage and process information (Secretaría de Educación Pública [SEP], 2016a, p. 38). Against the backdrop of the overflowing quantity of information, education faces the challenge of guaranteeing full access to it, learning to teach and distinguishing what is relevant, knowing how to evaluate, classify and interpret (information), and use it responsibly (SEP, 2016a, p. 41). Individual processing of the information requires complex cognitive functions such as problem solving, critical thinking and creativity (SEP, 2016a, p. 41). Specifically, the curriculum proposal of the 2016 Educational Model states that contrasting information from different texts on the same topic is one of the core points that students should be able to accomplish in the 1st grade of middle school (SEP, 2016b, p.71)

Although the comprehension of multiple documents is present in the Mexican secondary education curriculum, there is a shortage of research on the subject in the Mexican context. Most research on the comprehension of multiple documents has been conducted abroad. Some authors that have published in the field are Cerdán and Vidal-Abarca (2008) in Spain, Karimi and Shabani (2013) in Iran, Jucks and Paus (2013) in Germany, and Anmarkrud, Bråten, and Strømsø (2014) in Norway. Although the previously listed studies are about multiple document comprehension,

none is focused on teaching and evaluation practices of the comprehension of multiple documents. Chou (2008), Taboada and Buehl (2012), Holt (2015), Protacio and Jang (2016), and Perales-Escudero, Busseniers and Reyes (2017) have studied reading from the teachers' point of view; nonetheless, their studies are about single-text reading. We found studies focused on multiple documents (Britt and Sommer, 2004; Bråten, Britt, Strømsø & Rouet, 2011; Maier and Richter, 2013; Ferguson, Bråten, Strømsø & Anmarkrud, 2013; & Linderholm, Therriault & Kwon, 2014); however, to the best of our knowledge, there are not studies on multiple document comprehension from middle school teachers' perspective. Considering the paucity of studies, it would be appropriate to follow up by addressing teachers' perspectives to multiple document comprehension in our country.

Along similar lines, the number of bilingual schools has increased in the last years. Bilingual education "aims to promote bilingual (or multilingual) competence by using both (or all) languages as media of instruction for significant portions of the academic curriculum" (Genesee, 2006, p. 548). The use of a second language should be integrated to the contents of the curriculum, thus to multiple document literacy instruction. Overall, the importance of multiple document literacy is not equal to the amount of research that has been done on the topic, particularly when it comes to its application in bilingual middle schools and its related teaching and evaluation practices. Multiple document comprehension research has not been found in those contexts. The comprehension of multiple documents demands more research due to its integration to the 2016 Mexican Educational Model; moreover, more research can help to go beyond the boundaries of what it has already been researched and highlight multiple document comprehension's noteworthiness. This topic has not been analyzed from the perspective of middle schools or bilingual schools, as it was previously explained. The paucity of the mentioned variables in the multiple document comprehension research spectrum opens up the possibility for this research to fill in this gap.

1.1.1 Multiple document comprehension teaching in Mexican middle schools

The need and importance of comprehending multiple documents has been raised at different moments. Earlier on, in 2011, the Basic Education Integral Reform was set up. This reform placed the focus on students and on the competences they are to achieve. Among the different and new

contents included in the Curriculum Reform, it is multiple document comprehension. As stated in the national middle school curriculum, the ability to comprehend multiple documents is now one of the expected skills of middle school graduate students: "[The student] searches for, analyses, evaluates and uses information that comes from multiple sources" (Secretaría de Educación Pública, 2011a, p.39). Thus, multiple document comprehension content was integrated into the middle school curriculum guides published by the Secretariat of Public Education in 2011. There is a guide for each of the different subjects of the middle school curriculum. For example, multiple document comprehension practice is included in first, second and third level of the Spanish Study Program (SEP, 2011b). In first grade, it was included in units 1, 2 and 3 (pp. 44, 45, 47, 49, 50). In second grade, multiple document comprehension was promoted in all five units (pp. 62, 65, 68, 73, 74), and in third grade, it could be noticed in units 1, 2 and 5 (pp. 84, 84, 93). Multiple document comprehension was represented in the units as products, reflection topics and expected learning outcomes. This reform is based on the Program for International Student Assessment (PISA). The reform aims to reach the third level of PISA by 2021. This level requires students to have the ability to read different kinds of texts (SEP, 2011a, p.85).

In 2016, the rationale behind the Educational reform underlined students' learning deficiencies among which reading comprehension was pointed out (SEP, 2016a). Multiple document comprehension practice was included in the Language and Communication dimension, specifically in the expected learning outcomes of the Spanish subject. Multiple document comprehension activities are to be performed along the three middle school grades. During first grade, students have to write a monograph using information from different sources. In the second year, students must learn to integrate information from various sources to write their own text. Throughout the third year, they have to develop an argumentative essay taking into account the different ways in which the topic is approached in different sources.

1.2 Rationale

In order to understand the significance of multiple document literacy in Mexico, it is crucial to know Mexico's results on the PISA report carried out by the Organization for Economic Co-operation and Development (OECD). In the 2015 report results, none of the fifteen-year-old-students evaluated reached the highest level of reading comprehension established by the OECD

(INEE, 2016). According to the OECD (2016), reading tasks located in the highest level of reading comprehension in the evaluation, "require demonstration of a full and detailed understanding of one or more texts and may involve integrating information from one text to another" (p. 162). These tasks require a high level of multiple document literacy. In contrast, tasks located in the second level of reading comprehension focus on single texts and require the recognition of the main idea, low level inferences, and other single-text based tasks; 34% of Mexican test-takers (the largest percentage) were at this level (OECD, 2016). This level does not require multiple document literacy.

During the time span I have spent as a college student, I was never fully aware of multiple document literacy, so when I was first introduced to it, I realized my own need to develop the competence to read multiple documents. I understand that literacy in reading multiple documents is a competence that can broaden my knowledge of a subject, which would not be possible with reading a single text. My interest in the topic has been increasing. In addition, the fact that is an under-researched topic represents a challenge and a motivation to go on with the research.

1.3 Objective

The general objective of this thesis is to design and validate a scale to assess multiple document comprehension teaching and evaluation practices at private bilingual middle schools in order to provide researchers with a valid, reliable and accurate instrument to measure teaching and evaluation practices. Thus, the specific objectives that lead us to fulfill our general objective are the following ones:

1.3.1 Specific objectives

1. To define the construct intended to be measured
2. To determine the dimensions of the construct to be measured
3. To devise and score items for each dimension
4. To pilot the scale
5. To conduct statistical tests to validate the scale
6. To adjust the scale in accordance with the validation testing results

1.4 Significance of the study

The significance of this study lies on various aspects. First, researchers are provided with a scale to measure multiple document comprehension teaching and evaluation practices. To our knowledge no scale has been designed to quantitatively measure the topic of study of this research. Moreover, designing and validating this scale shed some light on the practices of bilingual middle school teachers regarding multiple document comprehension. Consequently, identifying multiple document comprehension teaching and evaluation practices provides a tool for decision-makers to diagnose teachers' state of knowledge and design interventions to increase it. In this way, teachers and students in bilingual middle schools benefit the most from this research. Also, the scale could be improved and adapted to other contexts, thus expanding its reach. Another aspect is that this thesis, in general, benefits the literature on the topic, both worldwide and in Mexico. Likewise, future students researching the same or similar topics can use this thesis as a starting point of reference to approach the content of the literature review and theoretical framework. This study is aimed to shed some light in the multiple document field, especially from perspectives that have not been explored yet: the teachers' practices at bilingual middle schools.

CHAPTER II. LITERATURE REVIEW

Multiple document literacy is relevant to all levels of education, from primary school up to higher education. As it was stated in the introduction, and as far as we have investigated there are not studies on multiple document comprehension from the perspective of middle school teachers, thus we reviewed studies from the perspective of students. This chapter concentrates on multiple documents comprehension research across three levels of education: higher education, high school, and middle school . These studies may be helpful to identify the relevance processes that take place during reading multiple documents. Additionally, a section about reading comprehension teaching studies was added. Lastly, an overall view of the studies is presented.

2.1 Multiple documents comprehension research conducted in higher education

Kim (2014) carried out a multiple-document study that aimed to describe readers' bias and related strategy use associated with their beliefs when comprehending controversial texts; in addition to examine searching patterns of the readers in relation to their bias. There were 15 participants in this study, all undergraduate students. Five students were pro-Israel, five were pro-Palestine, and five were neutral participants. The study used a think-aloud methodology and it consisted on giving participants two maps and five texts about the Palestinian-Israeli conflict. The verbal reports were recorded and analyzed. The findings reflected that the students' beliefs acted upon their acceptance of belief-consistent texts and upon their rejection to belief-inconsistent texts. Regarding the searching patterns, it was concluded that they were not influenced by the participants' topic beliefs.

 Anmarkrud, Bråten, and Strømsø (2014) conducted a qualitative study. The aim of this study was to identify how undergraduate students explored spontaneous strategic processing of multiple conflicting documents about a specific topic. The participants were 51 undergraduate students majoring in education and special education at a university in Norway. The authors used the think-aloud methodology. The recordings were transcribed and the data was analyzed. The

participants were asked to read six documents about cell phones and potential health risks. After, they were asked to articulate what they thought and did as they read and those utterances were recorded. Then, they wrote an essay on the topic of the documents they read. Additionally, participants were asked to evaluate the sources obtained from the six documents' information. The results of the study revealed the students' knowledge of the topic was very low in general. Regarding the strategic processing during multiple document reading, data showed that the 49.1% of the strategic processing episodes of these students fell in the category of evaluating, followed by episodes falling in the category of identifying and learning important information with a 34.4%. The episodes falling in the evaluating category represented 16.6% of all the episodes (n=326). Likewise, regarding the strategic processing and evaluation of document trustworthiness, data demonstrated that the use of evaluation strategies would be associated with more trust in unbiased sources, while prompting less trust in biased sources. Lastly, the study indicated that strategic processing may be related to written argumentation as strategic processing and the number of references to the six sources in the essays were positively correlated. Based on how their study explores components of monitoring, evaluating and cross-document linking strategies that might improve multiple documents comprehension if taught, the authors express their hopes for their study to prompt further research on how comprehension should be taught.

In another study, Maier and Richter (2013) did a multiple-document research on text-belief consistency and its effects on the situation model and memory for texts. The 79 participants, undergraduate students, had to read four controversial scientific texts, after completing a prior beliefs measure and a prior knowledge measure. The texts were presented according to the students' beliefs on whether they were consistent or inconsistent to their beliefs. A task of recognition of the texts was carried out afterwards. It was found that prior belief influence processing of multiple texts with conflicting information differently on the situational model and on the propositional text base. It is pointed out that prior beliefs have an impact on the students' comprehension of multiple documents and that should be considered when reading multiple controversial texts in the instructional context.

In 2013, Karimi and Shabani developed a research that compared the strategies used while reading multiple documents in the EFL contexts. 30 Midwifery students were the participants of the study, of which 15 were more successful, and the other 15 were less successful reading according to a TOELF-like test. A multiple text comprehension tasks and an Intertextual Inference

Verification Task were given to the participants to solve. The scores were analyzed and the results showed that the most successful students employed more analytic and pragmatic strategies than the students on the other group. In the discussion, the authors state that their study shed some light on the strategies employed by successful students and that programs to instruct less successful students should be designed.

Bråten and Strømsø (2010) conducted a study whose objective was to examine the contributions of simplicity and justification beliefs to superficial and deeper-level comprehension of multiple texts in law students. The participants were 49 Norwegian law students. All the participants were given a folder with a topic measure, personal epistemology measures, the seven content documents to be read, and a final multiple document comprehension measure. Subsequently, they were asked to do the tasks. It was specified that the students were told to read the seven content documents as if they were to write a report about them. Results showed that simplicity beliefs and justification beliefs predicted the students' comprehension performance; hence, there was a unique contribution of the beliefs to comprehension of multiple documents.

Cerdán and Vidal-Abarca (2008) developed a research aimed to examine integration of information from multiple scientific documents in order to describe and explain a physical phenomenon. The participants were 56 undergraduate students that were enrolled in a psychology program at the University of Valencia, Spain. The participants were divided into two groups. The first group was assigned an intertext task, and the other group had to answer intratext questions. Results showed that, on the one hand, integration of multiple documents is facilitated and achieved by selecting relevant units of information and combining them. Likewise, integration is influenced by the tasks given. On the other hand, integration of multiple texts is affected if texts are processed as isolated units of information. Thus, there is a need to investigate teaching strategies to foster integration of multiple documents.

2.2 Multiple document comprehension research conducted in high schools

The following are some examples of multiple document research in high school. As it is observed, these studies were conducted from the perspective of the students, either on beliefs or epistemic

perspectives. They were not focused on teachers or their practices. There is a noticeable absence of said kind of studies.

Cerdán, Marín and Candel (2013) carried out a mixed-method study whose core aim was expanding research on perspective to situations where students have to deal with reading multiple documents. There were 59 participants, all of them were high-school students. Participants were divided into three groups: a group against, a group in-favor, and a group of neutral feedback. Students were asked to answer an open question about transgenic food from the perspective of the group they were in. From the six documents given, participants had to select the sources that helped them answer their question. Likewise, students' reading skills were assessed. They also completed a source trustworthiness ranking task before and after the question activity. The data to be analyzed was taken from the software used to present the documents. The results showed that the use of documents varied in accordance to whether the document was relevant or irrelevant to the participant' perspective. Also, having a perspective helped students differentiate trustworthy and untrustworthy texts, which was different from the cases where there was no perspective assigned. The evaluation of sources tasks demonstrated that high school students are aware of source information. The article finished by proposing that research in the future should dig into other types of instructions, topic preferences of the students, and their capability to identify and integrate arguments within documents.

Another study conducted in the high-school context is Ferguson and Bråten's (2013). They conducted a mixed-methods study on students' profiles according to justification beliefs and scientific knowledge, and investigated whether those profiles would change after reading multiple conflicting documents. The comprehension of multiple documents across profiles was also part of the study. The participants were 65 Norwegian 10th graders. Students' knowledge and justification beliefs were assessed through questionnaires before students read five texts on sun exposure and health. They could choose the order and navigate freely across and within the documents. After, they answered three short-essay questions to assess their comprehension of the different texts. In addition, their knowledge and justification beliefs were assessed again. The authors conducted cluster analysis. Regarding students' profiles, a subgroup with high levels of knowledge and low justification beliefs was found, further a subgroup with the opposite characteristics was also located. The first group was found to have outperformed the second group in terms of multiple document reading comprehension. Finally, the scores proved that the participants' knowledge of

the topic increased after reading, whereas justification beliefs decreased after reading. The authors emphasize that knowing about students' profiles may help to adapt instruction targeted towards a specific profile. They also mention that changes influenced by reading multiple controversial texts should be tested with other research conditions.

Ferguson, Bråten, Strømsø and Anmarkrud (2013) conducted a qualitative study. Its main objective was to "examine potential effects of working with multiple conflicting documents on a particular scientific issue on 10th-graders' epistemic beliefs concerning different dimensions of justification for knowing about science as well as on their epistemic beliefs about the certainty/simplicity of knowledge concerning the particular scientific issue in question" (p. 103). In this particular study, the participants were 10th graders (n=122). The participants were randomly assigned to control and experimental conditions. A questionnaire was used to assess beliefs about justification for knowing, while an adapted measure was used to assess topic-specific certainty/simplicity beliefs. The reading task consisted on reading five documents about sun exposure and health. The control group was given a set of documents with consistent information meanwhile, the experimental group's set of documents presented conflicting information. After closing the documents, students answered two short-essay questions that worked as multiple document comprehension measure. After analyzing the data, it was displayed that only the experimental group changed their domain-specific and topic-specific beliefs after reading conflicting texts. In the multiple document comprehension measure, participants from the control group underperformed in comparison to the experimental group. Authors express that future studies on multiple document comprehension and epistemic beliefs need variation of students' populations and reading topics as well as variation of instructional contexts.

2.3 Multiple document comprehension research conducted at a middle school

Multiple document comprehension in the context of middle schools has not been largely studied. A study researching about multiple document comprehension in middle school students was found; however, it focused on student practices rather that teacher practices. In this study Mason, Scrimin, Tornatora and Zaccoletti (2017) attempted to examine the role played by students' dispositional emotion reactivity when comprehending online information on a controversial topic. The topic

was mobile phones and health risks and there were 104 middle school students considered for the study. In a first session, students were tested for prior knowledge about the topic, reading comprehension ability, internalizing problems, and main subjects' grade. In the second session, their working memory and skin conductance as physiological parameter was tested. The third and last session involved the reading task, which consisted in reading six online documents. Also, two outcome measures (a sentence verification tasks to assess surface comprehension within texts and an essay to assess comprehension across them) took place. Data was analyzed through a cluster analysis. Results unveiled that there were high reactive and low reactive profiles. Students with a low reactive profile surpassed high reactive students at connecting source information to content. Although the author considers some limitations in the study, it opened up a path in multiple document comprehension research as it included as a variable emotion reactivity measured by skin conductance.

2.4 Studies on reading comprehension teaching

This section includes six studies that explore the teaching of reading comprehension. There is one study that digs into multiple document reading comprehension teaching. The other five studies focused on different aspects of single-text comprehension teaching.

Barzilai, Zohar and Mor-Hagani (2018) did a systematic multiple document comprehension literature review that had as core aim synthesizing empirical studies on how intertextual integration is encouraged in educational settings in order to explore the state of knowledge of the topic. The authors established different inclusion criteria and codes to select the studies to be included, and they gave an overview of the studies as results. Among the results, the authors described that 77% of all the studies analyzed included instructional practices. In the table below, these practices are listed and described.

Table 1.

Instructional practices for teaching integration

Instructional practices for teaching integration	Description

Engaging students in collaborative discussions and practice	Working in dyads or small groups, read individually and then work as a group.
Explicit instruction of integration	Explanation by teachers, providing written information, video tutorials, guided student discussions about the strategy.
Providing integration process prompts	Providing questions, cues, or reminders that guided and encouraged students to integrate multiple texts as they engaged in reading, discussing, or writing.
Annotation or summarization of single texts	Take notes, highlight, underline, or summarize individual texts as aids for comprehending the texts as a whole.
Employing graphic organizers or representations	Use of graphic organizers and representations, such as tables or maps, was a frequent instructional practice.
Modeling integration	Demonstrating them while describing actions or thinking aloud.
Individual practice	Guided and independent individual activities in which they applied what they learned to new documents or new tasks.
Providing feedback	Providing feedback on the quality of students' integrative products.

Source: Barzilai, Zohar and Mor-Hagani (2018)

Chou (2018) developed a study whose main objective was to investigate teachers' belief systems about reading theories and strategies, and to contrast practical teaching activities to them. This was a study focused on single-text reading comprehension. The study was focused on an EFL context

and 42 English instructors were the participants. The instrument used was a questionnaire divided in three domains that explored the importance, the necessity, and the employment in the classroom of reading theories and strategies in reading comprehension. The findings indicated that these domains of the teachers and the practices were positively correlated.

Perales-Escudero, Busseniers and Reyes (2017) examined variation in pre-service EFL teachers with respect to their implicit reading models and metatextual knowledge. In this study, which was focused on single-text reading, two different groups were applied a questionnaire first proposed by Hernández (2008) to find out in which theories or reading models the students were subscribed to. These groups were composed by 30 ELT undergraduate students under a new curriculum; and the second group was composed by other 30 ELT undergraduate students under the previous curriculum. The data was analyzed through qualitative analysis and the constant comparative method. It was found that the groups' beliefs varied; however, in both groups, most students were subscribed to the least advanced models. The authors point out the necessity of changing the curricula and reading instruction training.

Holt (2015) carried out a qualitative study that aimed to determine teachers' beliefs and perceptions regarding the connection between increasing reading motivation and comprehension growth during single-text reading. The participants were five elementary classroom teachers and they were interviewed and recorded. The author listened to the recordings and took notes in order to analyze and locate common themes. The results showed that, indeed, teachers perceived and believed there is a connection between reading motivation and comprehension. Teachers expressed that they could see that students who were motivated to read could comprehend better, in comparison to those low and no motivated students.

In another study, Taboada and Buehl (2012) explored through the use of open-ended questions, what teachers believed about reading comprehension and motivation to read. The participants were from two different countries; 21 teachers were from the United States and 23 teachers were from Argentina. The teachers were asked 6 open-ended questions about reading comprehension and reading motivation, and their responses were coded. Likewise, the codes were compared and discussed. Results showed that there were some similarities and differences between Argentinian and American teachers. The teachers expressed different views on instructional practices that support reading comprehension. They also had different perspectives on the

conception of motivation and practices that support reading motivation. The authors emphasized it is important to consider the results to take care of teachers' misconceptions.

Lastly, Vega, Moreno and Correa (2016) conducted a qualitative research. The core aim of this study was analyzing and characterizing the components of teachers' pedagogical knowledge of expositive texts in elementary school. The instrument used was a structured interview and 34 elementary school teachers were the participants. The data from the interviews was codified and categorized in sections that corresponded to characteristics of pedagogical knowledge to teach expositive texts. There were six categories: notions about expositive texts, knowledge about strategies to comprehend expositive texts, knowledge of instructional methods, knowledge about comprehension difficulties, knowledge about assistance to solve comprehension difficulties, and knowledge about evaluation. Data analysis allowed the researchers to comprehend the components that conform the knowledge of teachers to promote expositive texts comprehension according to each category. The results shed some light on teachers' knowledge based on what they reported only; thus, it was suggested by the authors to accompany the interviews with observation of practices in order to correlate what teachers report with what they perform in class.

Through this section of the thesis, a series of studies pertaining to the topic of study are reviewed. Regarding the studies on multiple document comprehension in a university setting, there are six studies. The studies conducted by Anmarkrud, Bråten and Strømsø (2014) in Norway, Cerdán and Vidal-Abarca (2008) in Spain, Maier and Ritcher (2013) in Germany, and Karimi and Shabani (2013) in Iran are some examples. These authors explored multiple document literacy from the perspective of the students and the effect of multiple document reading on the belief system of the participants. Likewise, Cerdán, Marín and Candel (2013), Ferguson and Bråten (2013), and Ferguson, Bråten, Strømsø and Anmarkrud (2013) were the three examples developing research in a high school setting. In middle school, the study by Mason, Scrimin, Tornatora and Zaccoletti (2017) was the only study found. As it is observed, there is a paucity of studies done in high schools and middle schools. This research study contributes by designing a scale that sheds some light on multiple document literacy in middle schools.

The studies done by Chou (2018), Holt (2015), Toboada and Buehl (2012), Perales-Escudero, Busseniers and Reyes (2017), and Vega, Moreno and Correa (2016) are all done taking the perspectives of the teachers; however, their studies are focused on single-text reading. Our

study is done under the scope of multiple-text reading; therefore, the perspective of the teacher would open a new spot in the multiple document research. Lastly, the study conducted by Barzilai, Zohar and Mor-Hagani (2018) approaches the practices in multiple document reading instruction. It presents a summary of the practices, but whether teachers are aware of these practices is not explored. Also, it is unknown if teachers take those practices to the classroom. This thesis' objective seeks to fulfill the gaps found in this literature review, being the paucity of a scale to measure teachers' multiple document comprehension practices the key aspect to be researched.

2.5 Theoretical framework

2.5.1 The Sociocognitive Interactive Model

The present study is based on Ruddell and Unrau's (2013) Sociocognitive Interactive Model, in which reading is defined as a process of meaning-construction that takes the classroom as its context. The model has three staple elements: the reader, the text, and the teacher. These elements interact while reading takes place and meaning is in the process of construction. The first component, the reader, is constituted of two parts: the affective conditions, which include motivation, values and beliefs about reading; and the cognitive conditions, in which points such as background knowledge of language and text-processing strategies partake. Affective conditions, except for beliefs, are not considered in this study; the cognitive conditions are included in this study from the perspective of the Documents Model theory (Perfetti, Rouet & Britt, 1999). The Documents Model theory is explained in a different section of this theoretical framework.

The next component of the model taken into account is the teacher. The Sociocognitive Model highlights the role of the teacher, and the authors describe it as "critical in negotiating and facilitating meaning construction in the text and the social context of the classroom" (p. 1016). The component of teacher also includes affective and cognitive conditions; however, they vary from those of the students. Philosophy, instructional beliefs, motivation to engage students and instructional orientation are some of the elements that take part in the affective conditions of the teacher. Some of the cognitive conditions are conceptual and instructional knowledge, and personal and world knowledge.

Along with the affective and cognitive conditions, the teacher's *knowledge use and control* are part of the model. This factor includes an *instructional decision-making process*, a process in which *instructional purposes* are formed under the base of prior beliefs, prior knowledge, and current classroom conditions. The *general purpose* guides instruction through features such as specific purpose setting, planning and organizing, and strategy construction. After that, whilst teaching, those features take form in activities, instructional strategies, management techniques

and meaning construction. This process is encapsulated in *instructional representation*. *Instructional decision making* can give new semantic or lexical knowledge, interpretation of text, or cognitive and reflective insights.

The last component of the model, the classroom, is defined by Ruddell and Unrau (2013) as "the learning environment in which the meaning-negotiation process occurs" (p. 1019) The construction of meaning develops within the classroom, which envelops the processes developed by the students and the teacher. In the classroom, there is also negotiation between students and teacher on knowledge use and control, as well as prior beliefs and knowledge. Regarding the classroom, this study does not focus on observing it, instead, the classroom is described through the teachers' reports.

2.5.2 The Documents Model Theory

In 1999, Perfetti, Rouet and Britt published the Documents Model, which explains the processes involved in intertextual learning and comprehension. (Vega, Bañales & Reyna, 2013). The Documents Model is a mental representation and it is the result of two interconnected submodels: the Situation Model and the Intertext Model. The Intertext Model is composed by document nodes. Each document in the model has nodes (small mental representations of aspects in intertextual reading) for the variables of source, rhetorical goals and content. Furthermore, the source node involves variables about the author identification (his identity, status, credentials, motives, access to the information), the setting identification (place, date, historical period and cultural context), and document form (language style and document type).

Rhetorical goals may also be included in the Documents Model. These goals include the author's intent of informing, persuading, recording or illustrating, as well as the audience the document is targeted to. These variables are usually inferred by the reader through the use of his previous knowledge. Likewise, the content variable of the document nodes is described as "a text abstraction of the main point or thesis of the document" (Perfetti, Rouet & Britt, 1999, p. 105). Furthermore, the Situation Models are global and coherent representations of the text that are built

through the interpretation of the meaning of the text and its integration with the readers' prior knowledge. This interpretation allows deep understanding (Vega, Bañales & Reyna, 2013).

The source node and the content node are linked within the same document through the source-content link, while documents are related intertextually through source-source and content-content links. Citation and credentials are examples of items that establish source-source links. Content-content links depend on the type of text, the type of task that require integration of the documents, previous knowledge of the topic, among others. Amid links and nods, the Documents Model Theory explains how different texts are integrated by the reader. The theory describes how an ideal reader would integrate multiple documents. Although it establishes what the ideal product of reading multiple documents is, the Documents Model does not specify what kind of task or practices lead to that. In response to the gap in the model, other proposals such as the Multiple-Document Task-based Relevance Assessment and Content Extraction Model and the Domain Model have arisen. The following sections are focused on them.

2.5.3 The Multiple Document Task-based Relevance Assessment and Content Extraction Model

Rouet and Britt's (2011) Multiple-Document Task-based Relevance Assessment and Content Extraction Model (here after MD-TRACE), as the authors state, "describes document use as an unfolding cycle of processing steps and decisions" (p. 5). The model describes the process to solve multiple document tasks (Rouet & Britt, 2011, p. 282). The MD-TRACE model is composed of 5 steps. Step one consists in creating and updating a task. It requires the reader and doer of the task to identify the task, the topic to be studied, the question and the cognitive actions that must be done, the given theoretical and tasks conditions. The readers create a representation of the task and establish goals or expected outcomes that will drive the process. In this step, limitations are also considered as part of the readers' representation. In the second step of the model, the reader should assess his information needs by comparing his knowledge with the task's demands. This allows the students to evaluate the information they already have and determine whether it is enough to complete the tasks.

Step three is the comprehension of multiple documents itself and it is divided in another 3 steps. The first of these steps is evaluating the sources' relevance. This means to evaluate the relevance of a document by the accessibility, reliability and usefulness of the source, which leads the reader to use or not use the documents. In the second sub-step, there is an engagement between the document and the reader. The purpose of the step is to extract and integrate content information. The third sub-step consists in creating and updating a Documents Model, a model that was described earlier in this work. It is important to highlight that while integrating documents these can add, support, or contradict one another, so a Documents Model is especially useful in such complex cases.

Step four of the MD-TRACE Model is to create/update a task product. Using the information from the documents, the reader constructs the outcome of the tasks. The information is transformed into a response accurate to the specifications of the task. The outcome is assessed in Step five by comparing the response to the goals and the task; if they match and the outcome is satisfactory, the process ends. The assessment also allows the reader to consider which step he has to come back to in order to improve and correct the outcome.

2.5.4 The Domain Model

Another component of the Documents Model is the Domain Model (Goldman, Lawless & Manning, 2013), the Domain Model is made up of six components. Interpreting the task is the first component of the model that consists in reflecting on the objectives and limitations of the tasks, as well as the possible problems; and a reflection on the kind of sources that might be useful. After that, the second component, gathering resources, takes place. It consists in "finding, identifying, and locating information to address the tasks" (Goldman, Lawless & Manning, 2013, p.183). Sourcing and selecting resources, the third component, requires the reader to select the most useful resources to complete the tasks.

Analyzing, synthesizing, and integration of information within and across sources are the elements inside the fourth component. The information is analyzed, and synthetized by comparing and contrasting information to find relations inside and among documents. Afterwards, it is

integrated. A text-level representation and a Situation Model are created and brought together. This component is similar to the Documents Model.

Component five is applying information to accomplish the task. Information is organized in order to fulfill the task's requirements. This process might involve reaching deep levels of understanding and reinterpretation of the information. The last component is evaluating processes and products. Evaluating goes across all other components and works as a link that goes from one component to the other; therefore, evaluation is present in all component. For example, in gathering and analyzing resources or while applying information to accomplish the tasks.

2.5.5 Student Model for Analysis, Synthesis, and Integration

The Student Model (Goldman, Lawless & Manning, 2013) is made up of claim-evidence statements that indicate what students know and what they can do in terms of analysis, synthesis, and integration. The claimed-evidence statements specify what skills are involved in the comprehension of multiple documents. Based on the reader's evidence (the task's product), what students can do (claims) is established in the subcomponents of analysis, synthesis, and integration. Table 2, created by Goldman, Lawless and Manning (2013), shows the claims and evidences for each subcomponent.

Table 2.

Unpacking the analysis/synthesis/integration component of multiple source comprehension (abridged version)

Subcomponent	Student Model	
	Claim statement	Evidence statement
	The student can…	The work provides information that…
Analysis	1. Show that, how or why, when	1. The student
1. Determine relevance of information to task	or where part of text is useful for task.	differentiates parts of

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2. Identify claim(s) and evidence in each text	2. Differentiate between claims and their information.	text useful for task from those not useful. 2. The student identifies the distinct claims and evidence for them.
Synthesis 1. Compare claims across sources for consistency and relevance to inquiry task. 2. Compare evidence from different sources	1. Determine which claims agree, disagree, or complement one another 2. Determine which evidence is consistent, which inconsistent across sources.	1. The student selects claims that agree or complement one another to address the inquiry question. 2. The student detects inconsistencies across evidence and provides explanations of why they are inconsistent.
Integration 1. Combine similar claims; organize complementary claims. 2. Relate evidence to claims, regardless of how they were introduced in the texts.	1. Take claims from different sources and combine them into one claim or set of claims. 2. Connect evidence to appropriate claims regardless of original text source.	1. The student combines consistent claims into one claim or argument that addresses inquiry task. 2. The student provides evidence to support claims.

Source: Goldman, Lawless & Manning, 2013, p. 187

2.5.6 The Evidence Model

The Evidence Model, also proposed by Goldman, Lawless and Manning (2013), states how the products are to be evaluated in accordance with the Student Model's claim-evidence statements,

again in three aspects, analysis, synthesis, and integration. Skills are reflected as evidence in specific parts of the tasks. The authors use an essay task to illustrate the model. For instance, the evidence of the analysis aspect would be the inclusion of main and support reasons to uphold the student position on the essay. Concerning the synthesis, the evidence would be the inclusion of information from multiple sources, and in relation with integration, the evidence would be the inferences connecting claims. The following table (table 3) explains the model.

Table 3.

Evidence Model

Subcomponent	Evidence Model	
	Evidence from essay	Dependent measure
Analysis 1. Determine relevance of information to task. 2. Identify claim(s) and evidence in each text	Selective inclusion of claim and evidence nodes over details. Absence of distortions of text information.	Proportion of essay reflecting text base, especially elements central to inquiry question.
Synthesis 3. Compare claims across sources for consistency and relevance to inquiry task. 4. Compare evidence from different sources	Inclusion of information from multiple texts, especially multiple claim and/or evidence nodes.	Mean number of texts reflected in essay content.
Integration 5. Combine similar claims; organize complementary claims. 6. Relate evidence to claims, regardless of how they were introduced in the texts.	Inclusion of inferences that connect claims from different texts; and evidence within and across texts.	Mean number of inferences reflected in essay content, especially cross-text inferences.

Source: Goldman, Lawless & Manning, 2013, p. 187

The theoretical framework establishes the definitions and concepts explaining multiple document reading comprehension. These concepts and definitions were translated into conceptual definitions used to build the scale. Not all the aspects explained in the theory were covered by this research; nevertheless, the models were knitted together to build concepts that would characterize teachers' teaching and evaluation practices regarding multiple document comprehension. In the next chapter, the design process of the scale is explained, including the construction of operational definitions, based on the models and concepts introduced in the theoretical framework.

CHAPTER III. METHOD

The objective of this study is to design and validate a scale to characterize multiple document reading comprehension teaching and evaluation practices in bilingual middle schools. This chapter describes the method followed to develop the scale, as well as the statistical tests done to validate it.

A scale, also known as questionnaire, measures an attribute or characteristics. Also, unlike other instruments such as tests that measure skill, ability or knowledge (Santaolària & Doval, 2003), a scale collects information about respondents in relation to an attribute. The objective of the research is not to measure multiple document reading comprehension teaching and evaluation practices in terms of how well or poorly teachers perform or know about this kind of reading. The research aims to characterize the attribute of multiple document reading comprehension teaching and evaluation practices; therefore, it was decided to develop a scale

The scale design was developed following the methodology by Santaolària and Doval (2003). They suggest designing Likert-type scales. Likert scales aim to measure an attribute to describe people. In this type of scales, respondents are given a series of affirmations, known as items, and they are required to react to those affirmations by choosing one category of the ones presented as answer options (Hernández, Fernández, & Baptista, 2006). Santaolària and Doval (2003) methodology is structured in six phases: 1) delimitation of the objectives of the scale, 2) devising of items, 3) theoretical selection of items, 4) empirical selection of items, 5) configuration of the measurement instrument, and 6) evaluation of the psychometric properties of the scale. This methodology has a practical approach to the design of instruments that focused on characterizing attributes that fit the objective of this research. In order to meet the specific research objectives, it was necessary to carry out some of the phases suggested by Santaolària and Doval (2003). Next the phases followed to reach the research objectives are presented.

3.1 Phase One: Delimitation of the objectives

The first specific objective is to define the construct intended to be measured. In order to reach this objective, we carried out the delimitation of the objectives of the scale. The purpose of this phase is to clearly and precisely define the attribute to be measured and the target population of the scale. It is vital to have a well-defined attribute in order to get a guide to write the items. The attribute can be defined by a theory, or use a provisional definition to search for information in the sources available (Santaolària & Doval, 2003). The attribute to be measured in this research is multiple document comprehension and it is defined as "the ability to locate, evaluate, and use diverse sources of information for the purpose of constructing and communicating an integrated, meaningful representation of a particular issue, subject, or situation" (Branten & Stromso, 2010).

Now, the concepts surrounding multiple document comprehension were first explained in the theoretical framework of this thesis, being the *Documents Model Theory* (Perfetti, Rouet & Britt, 1999) the main model that sets conceptual definitions on the subject. This theory sets a framework for multiple document comprehension. The Documents Model is defined as a mental representation composed of two sub representations: the *Intertext Model* and the *Situational Model.* The *Intertext Model* consists of a representation of every document involved, known as *document nodes*, where each node has a slot for *source,* one for *rhetorical goals* and one for *content*. The *source* slot is filled with information about the author, setting, and form of the document. The *rhetorical goals* part refers to the intent of the document and the audience the author wrote for. The *content* slot of the document includes the main point or thesis of it.

The documents are joint together through *source-source links* and *content-content links*. The former are established through citation among documents, through the author's credentials and through the documents' temporal location. The latter are established based on the conditions found in multiple document reading, which are the type of task, the characteristics of the information, the type of questions that guide the tasks, and the characteristics of the discipline domain of the documents being read (Cerdán & Vidal-Abarca, 2008; Graesser, León & Otero, 2002 as cited in Vega, Bañales & Reyna, 2013). Considering these conditions, there are four types of *content-content links:* solidarity links, incremental relation links, familial-temporal links, and imprecise links.

The Intertext Model is normally linked to situations. Situations -real, hypothetical and interrelated situations- represent the *Situations Model* through which the reader ideally aims to complete an accurate representation of a situation. Both the Situations Model and Intertext Model are interconnected in order to get the complete Documents Model. The construction of a Documents

Model allows the reader to comprehend and integrate multiple documents (Vega, Bañales & Reyna, 2013).

Further conceptualizations regarding multiple document comprehension were set by additional models, and theories also explained thoroughly in the theoretical framework section of this work. One of them is the Multiple-Document Task-based Relevance Assessment and Content Extraction Model (Rouet & Britt, 2011). This model focuses on explaining the process that lead to solve multiple document comprehension tasks. Additionally, the *Student Model for Analysis, Synthesis, and Integration* (Goldman, Lawless & Manning, 2013*)* is another model used to conceptualize multiple document comprehension. The *Student Model* establishes the skills in terms of analysis, synthesis and integration that students are to demonstrate in order to claim that they know and are able to do multiple document comprehension. It is complemented by the *Evidence Model* (Goldman, Lawless & Manning, 2013). This model establishes the evidence of students' skills regarding multiple document comprehension in tasks and is also organized in terms of analysis, synthesis and integration.

These models partake on the conceptualization of the attribute. In addition, they are embedded in the *Sociocognitive Interactive Model* (Ruddell & Unrau, 2013). This model aims to explain "how the reading process occurs in the classroom context involving reader, text, and teacher" (Ruddell & Unrau, 2013, p. 1015). Altogether, the models conform a guide to write the items. The specific organization of the concepts is itemized later in this chapter.

In this phase of the methodology, (Santaolària & Doval, 2003) state that before writing the items of the scale, it is helpful to consider the characteristics of the target population. The items, content and instructions of the scale are affected by the characteristics of the persons that are going to answer the scale; therefore, it is important to be aware of the features of the population. This aspect is also vital to ensure the validity of the scale. The target population of this scale is made up of teachers of bilingual middle schools; nevertheless, as it was stated in the introduction of this thesis, there were not enough teachers in bilingual middle schools that was required to validate the scale. Therefore, the target population ended up being conformed by middle school teachers from all types of middle schools, including bilingual middle school teachers. This implies that they have at least a bachelor's degree and that they are knowledgeable of education-related terms. The Sociocognitive Model used in this research highlights the role of the context in which these teachers work: middle

school level. Middle schools' curricula implies the use of guides that posit activities related to multiple document comprehension. The design of the items took this information into consideration.

The definition of the construct on which the design of the items was based, requires other sources. We then followed the recommendation by Santaolària and Doval (2003) to design a scale. They state that the items of a scale can derive from a) original and adapted items included in existing scales, b) the opinion of experts about the attribute, c) ideas gathered from diverse sources, such as books and magazines, and d) expression, comments and opinions related to the attribute that are made by people that are part of the target population. Regarding the topic of this research, no scales have previously been designed to measure the attribute (source a); nevertheless, we were able to collect experts' opinions, consult ideas from diverse sources and collect people's opinions about the topic of study. To collect the opinion of the target population two experts in multiple document comprehension designed an interview based on their expertise (source b) on the literature (source c) and on information collected from teachers (source d).

3.1.1 Interview design

3.1.1.1 The opinion of experts and ideas from diverse sources

Hernández et al (2006) define the interview as "a meeting to exchange information between a person (the interview) and another (the interviewee) or others (interviewees)". Through this exchange, it is possible to achieve a joint meaning construction regarding the topic (Janesick, 1998 as cited in Hernández et al., 2006). Gehlbach and Brinkworth (2011) explain that interviews that are designed for scale development should be focused on the respondents' conceptualization of the construct. Turner (2010) adds that "interviews provide in-depth information pertaining to participants' experiences and viewpoints of a particular topic" (p. 754)

There are different types of interviews: structured, semi structured, non-structured and open, informal conversational interview, general interview guide approach, and standardized open-ended interview (Grinnell, 1997; Gall, Gall & Borg, 2003). The interview for this thesis was

developed under a standardized open-ended interview. This kind of interview is designed to allow respondents to give detailed information without restrictions and to give interviewers the freedom to ask follow-up questions (Turner, 2010). Although standardized open-ended interviews ask the same questions to all participants, it is possible to obtain responses that express the viewpoints and experiences of the participants. Thus, given the objective of using the data to design the scale, this approach was found fitting.

Two experts on multiple document comprehension teaching and evaluation practices proposed four sections for the interview, and a total of 23 questions. The questions were based on the theoretical and conceptual framework that guides this study. Alongside experts' knowledge, the middle school curriculum guides published by SEP in 2011 were reviewed to identify activities related to the topic of study. These guides posit activities that require multiple document comprehension. In the interview, some of those activities were taken as examples to familiarize teachers with the topic of research.

To review the first version of the interview guide, we met two experienced researchers on the design of qualitative instruments; before the working sessions, individually each expert reviewed some literature on multiple document comprehension, the Interactive Sociocognitive Model, the Documents Model theory, Student Model, the Domain Model, and the MD-TRACE Model as well as the middle school curriculum guides. During the first session, we worked on the operationalization of the variables. Experts contextualized the questions proposed by using examples of multiple document comprehension activities from the national middle school program in which, as stated before, the practice of multiple document comprehension strategies is required.

The experts also suggested the research team to work together to contextualize their version of the questions to the activities stated in the national middle school program school curriculum. The operationalization of the variables allowed us to adapt the questions proposed by the experts on multiple document comprehension teaching and evaluation practices to the context in which these questions would be administered.

The interview focused on middle school education, therefore, teachers from middle schools were chosen as respondents. The sample was composed of 11 middle school teachers (eight women and three men) between 32 and 53 years old. They were selected by convenience sampling. The co-principal investigator,Dr. Moisés Perales Escudero, contacted some of the teachers through his ongoing collaboration with the *Centro de Actualizacion del Magisterio*, the local Teacher's

College. Other participants were contacted by the thesis director based on acquaintances. The participating teachers came from schools in the following communities: Chetumal, Felipe Carrillo Puerto, Sacxan, Plan de Ayala and Calderitas. The middle schools in these communities were chosen in order not to apply the interview to teachers that would be respondents of the final administration of the instrument. Four of the teachers work at a *Telesecundaria*, six of them at general middle schools, and one of them at a technical middle school. Four of the teachers interviewed teach Civic and Ethical education, two teach Spanish, one History and Physics. The other four teachers work at *telesecundaria*; this means that they teach all of the subjects of the curriculum with support of broadcasted classes. Those who worked at a *Telesecundaria* have to teach all the subjects of a specific school grade. Regarding their training, all of them have a bachelor's degree, four have a master's degree and one a PhD. Their teaching experience ranges between five to 23 years. Thus, having chosen the participants and schools for this study, some of their characteristics were included under the socio demographic and school data sections.

3.1.1.2 Expressions, comments and opinions from the target population

Based on what Santaolària and Doval (2003) recommend as sources to collect information about the construct, experts first gathered knowledge on the topic from different text sources. Then the objective was gathering information about teachers' conceptualization of multiple document comprehension practices (source d). Then a question was designed to collect information from teachers related to the topics: multiple document comprehension teaching practices, and multiple document comprehension evaluation practices. Dimensions such as socio demographic data, teachers' and school data were then included.

Once the topics were stated, we moved on to the next step in the design of the interview by developing a topic guide. Topic guides list the themes to be explored and can have meticulously worded questions; they are known as interview guides (Arthur & Nazroo, 2003). Arthur and Nazroo (2003) state that "[the topic guide] helps to ensure that relevant issues are covered systematically and with some uniformity, while still allowing flexibility to pursue the detail that is salient to each individual participant" (p. 115). According to Arthur and Nazroo (2003), the process

to develop a topic guide starts with a review of the research specifications and of the relevant literature. Four versions of the topic guide were designed.

3.1.1.3 First version of the interview guide

The first version of the interview included 23 questions, organized in the following four sections: Section one: school data; Section two: socio demographic data; Section three: practices' perceptions; and Section four: evaluation. The topics first stated; conceptualization of the construct, multiple document comprehension teaching practices, multiple document comprehension evaluation practices, and socio demographic (teachers' data) and school data were subsumed into these four sections.

Table 4.

Relation between sections and topics of the interview guide

Sections	Topics explored
One:	Data of the school the teacher works at
Two:	Socio demographic data about teachers
Three:	Teachers' perceptions about multiple document comprehension teaching practices
Four:	Multiple document comprehension evaluation practices

Source: prepared by the author

In section one, we included questions about the name, type and location of the school. In section two, the questions referred to personal characteristics of the interviewee such as: teachers' gender, age, years of experience, previous training and data related to their classes. In section three, questions were related to teachers' perceptions about their teaching practices. The questions comprised in this section were related to teaching strategies, activities and types of texts used to promote and teach multiple document comprehension. The last section of the interview was focused on evaluation practices: content, strategies and instruments related to the reading

comprehension strategies of multiple documents. The interview guide was originally written and administered in Spanish. Here we present a version in English of this interview.

-INTERVIEW GUIDE-

Section one: School data

1. Name of school: _____
2. Type of school:_____
3. Municipality: _____
4. School Zone:_____
5. Margination Level: _____

Section Two: Socio demographic data

6. Gender:_____
7. Age:_____
8. Previous training:_____
9. Last degree obtained:_____
10. Years of teaching experience:_____
11. Subjects taught by the respondent:_____
12. Grades the respondent works with: _____
13. Number of groups the respondent works with: _____
14. Approximate number of students the respondent works with: _____

Section Three: Teachers' perceptions about multiple document comprehension practices

15. What is your notion (idea) about multiple document comprehension? That is, how do you understand this process?

Middle school curriculum guides' activities on multiple document comprehension:
In first grade, unit 2, "integrate information into a monograph" is included as social practice of the language. Also, as part of the production for its development, *the record of the information that supports that the inquiry was done in multiple documents* is included.

In second grade, unit 1, "analyze and compare information about a topic in order to write articles" is included as social practice of the language. Additionally, *the integration of*

information from multiple documents in an original writing is included as part of the reflection topics.

In <u>third grade</u>, unit 1, "write an argumentative essay" is included as social practice of the language. And *differences in the processing of a topic in multiple documents* is included as part of the reflection topics.

16. Which "didactic" strategies do you use to promote multiple document comprehension? Examples

17. What multiple document reading comprehension strategies do you promote to your students? Examples

18. What type of activities that involve the comprehension of multiple documents do you request to your students?

19. What type of texts do you use to favor the comprehension of multiple documents? (internet sources, blogs, textbook)

Middle school curriculum guides' activities on multiple document comprehension:
Regarding the communicative competence: "Analyze information and use language to make decisions. It is expected that students develop their capacity to analyze and make a critical judgment about information from different sources in order to make decisions that are informed, reasoned, and referenced to collective interests and norms in different contexts. This should be supported by different sources of information, written and spoken".

20. Do you promote strategies to evaluate the sources that your students consult? Yes, which ones? No, why?

Section Four: Evaluation

21. What do you evaluate regarding multiple document comprehension? Comprehension of content in multiple documents? Learning of strategies to comprehend multiple documents? Both aspects?

22. What type of evaluation strategies or instruments do you use?

23. What type of evaluation do you use? Diagnostic, formative, summative.

-END OF THE INTERVIEW-

Questions 15 and 19 included examples of activities and competences that students should do in middle school. These examples were taken from the middle school curriculum guides and they imply or demand reading multiple documents. The citations were used in the interview to remind teachers of the type of reading comprehension activities with which they might be familiar with.

In order to develop effective questions, some recommendations were followed. Legard, Keegan and Ward (2003) suggest using broad and narrow questions, avoiding leading questions, and asking clear questions in order to formulate the questions in an interview. They recommend avoiding prefacing a question, avoiding double questions and questions that are too abstract or theorized; lastly, they suggest taking into account the language and terminology used by people. McNamara (as cited in Turner, 2010) gives the following recommendations to write the questions of an interview:

1. Wording should be open-ended (respondents should be able to choose their own terms when answering questions)
2. Questions should be as neutral as possible (avoid wording that might influence answers, e.g., evocative, judgmental wording)
3. Questions should be asked one at a time
4. Questions should be worded clearly (this includes knowing any terms particular to the program or the respondents' culture)

Based on the former recommendations and guidelines (Legard, Keegan & Ward, 2003; McNamara, as cited in Turner, 2010) some of the questions from the first interview guide were omitted, rewritten or added. The weaknesses and inconsistencies of some questions regarding the operationalization of some variables were also reviewed and corrected. Some questions in the first version of the interview were found to be ambiguous. Question 15 was said to be rather abstract and ask two questions at the same time: *What is your notion (idea) about multiple document comprehension? That is, how do you understand this process?* It was then suggested to make it more specific and add a note to explain what *varias fuentes (multiple documents)* meant. Question 15 was then reworded as: *What is your notion (idea) about the processes that are involved in multiple document comprehension? (comprehension of multiple articles, videos, magazine articles, newspaper articles)* in the second version of the guide and it was numbered 22.

Question 23 was added to the second version of the guide with the purpose of knowing which activities and tasks require reading multiple documents: *What activities or tasks do you consider that require reading more than one text in a comparative or integrated manner?* This question inquires about teachers' perceptions of the construct.

On the other hand, some questions were qualified as biased by experts, this means that they suggested the expected answer. Thus, those questions were reworded. For example, question 16. *What "didactic" strategies do you use to promote multiple document comprehension?* This question led teachers to state that they did use didactic teaching strategies to promote multiple document comprehension among students. Therefore, the question was reworded as follows and numbered 25. *Do you teach multiple document comprehension strategies to your students? (strategies mean the activities you teach students to do. For example, looking for the main idea and others) Yes_____. No_____. That being the case, give examples and tell us how you develop them.* Although the question seems to have changed into a close question, it is important to remark that the interviewees still have the opportunity to answer in their own terms. 'Yes' and 'no' options were added as notes to guide the interviewer.

Other questions were too general and asked more than one aspect on multiple document comprehension practice, for example: *What do you evaluate regarding multiple document comprehension? Comprehension of content in multiple documents? Learning of strategies to comprehend multiple documents? Both aspects?* These questions were considered leading questions since the wording of the question suggests that comprehension of content and strategies are the only aspects that can be evaluated. The question leads the respondents to limit their answers to the options given. Thus, in the second version of the guide, the question was split into two questions: *31. Do you evaluate multiple document reading comprehension? Yes_____, which ones? No_____. What is the reason?* and *32. If you answer positively to question 31, teachers were asked to answer: what aspects do you evaluate?* Thereby, the original question is rendered non-leading and focused on one aspect at the time. Also, these kind of questions give the interviewee freedom to answer. Another modification to the first version of the interview was the addition of a fifth section titled: previous training. This section is fully explained in the second version of the interview.

The first version of the interview was the consolidation of the researchers' ideas about the construct and the translation of the research questions of the project into questions to gather data

directly from the target population. However, it had several wording mistakes. The suggestions made by the experts and the recommendations given in the literature allowed the design of the second version.

3.1.1.4 Second version of the interview

The second version of the interview included a new section consisting of six questions. Therefore, this version was composed of 29 questions organized into five sections. Section one and Section two were kept exactly as they were worded and organized in the first version of the interview guide. Given that the Sociocognitive Interactive Model includes teacher's previous knowledge on the reading process, it was found necessary to deepen into this matter; thus a whole new section was added after Section Two. This new section was denominated Section Three: Previous Training. Its addition modified the order of sections. This section was added to inquire about teachers' training regarding multiple document comprehension. Based on changes to Mexico's educational programs, teachers are required to develop activities about multiple document comprehension. It was therefore of importance to know if teachers received training regarding the topic of multiple document comprehension. The section included questions about whether teachers received training to teach multiple document comprehension, what kind of training they received, what the training consisted of, among others.

Section four included seven questions about teachers' perceptions about multiple document comprehension practice. Additionally, examples of activities drawn from the SEP's middle school curriculum guides were added. These examples were added in order to set teachers in context. Section five inquired about evaluation, it included six questions. Also, one of the competences required for middle school students was quoted at the beginning of section four. The purpose of adding these competences was to contextualize the respondents if necessary. Having checked the wording and located each questions in the corresponding section, it was decided this would be the piloting version of interview. The format of this version of the interview was also slightly modified to make it clearer. The complete interview guide is presented below. Questions marked with a * were modified or added to this version of the interview guide

-INTERVIEW GUIDE-

Section One: School data

1. Name of school: _____

2. Type of school: Mark with an 'X'

    __Public General   __Public Technical __*Telesecundaria* __Private middle school

3. Municipality:_____

4. School zone:_____

5. Margination Level: _____

Section Two: Socio demographic data

6. Gender:_____

7. Age:_____

8. Previous training:_____

9. Last degree obtained:_____

10. Years of teaching experience:_____

11. Subjects taught by the respondent:_____

12. Grades the teacher works with:_____

13. Number of groups the respondent works with:_____

14. Approximate number of students the respondent works with: _____

Section Three: Previous training*

15. Did you received training to teach reading comprehension during your bachelor's degree program? Yes_____. No_____.*

16. That being the case, did you received training to teach multiple document comprehension during your bachelor's degree program? Yes_____. No_____.*

17. In the last five years, have you received training to teach reading comprehension? Yes_____. No_____.*

18. In the last five years, have you received training to teach multiple document comprehension? Yes_____. No_____.*

19. According to answers to questions 17 and 18, mark with an 'X' in the corresponding space *

Type of training	Reading comprehension	Multiple document comprehension
Courses		
Workshops		
Diploma course		
Graduate studies		

20. Would you explain to us what has the training you have received consisted of?*

21. Do you consider that the training you have received is pertinent to your teaching practice? In terms of promoting reading comprehension, and specifically, multiple document comprehension.*

Section Four: Teachers' perceptions about multiple document comprehension practice

22. What is your notion (idea) about the processes that are involved in multiple document comprehension? (comprehension of multiple texts that can be texts, articles, videos, magazine articles, newspaper articles)*

23. What activities or tasks do you consider that require reading more than one text in a comparative or integrated manner?*

In order to contextualize, as an example:

In first grade, unit 2, "recording information supporting multiple document reading comprehension is an activity required to develop a monograph.

In second grade, unit 1, "analyzing and comparing information about a topic in order to write articles" is included as a social practice of the language. Additionally, "integrating information from multiple documents in an original writing" is included as part of the reflection topics (aspects to be developed based on the type of text practiced in the unit).

In third grade, unit 1, "writing an argumentative essay" is included as social practice of the language. And, "differences in the processing of a topic in multiple documents" is included as part of the reflection topics.

24. Do you use teaching strategies/activities to promote multiple document comprehension? Yes_____. No_____. That being the case, mention some examples.*

25. Do you teach multiple document comprehension strategies to your students? (strategies mean the activities you teach the students to do. For example, looking for the main idea and others) Yes_____. No_____. That being the case give examples and tell us how you develop them.*

26. Do you request assignments that require your students to read multiple sources? Yes_____. No_____. That being the case, give examples and tell us how you develop them.*

27. If you answer positively to questions 3 and/or 4, and/or 5, what type of sources do you use to promote multiple document comprehension?   (Example: internet sources, blogs, textbook).*

28. If you answer positively to questions 3 and/or 4, and/or 5, what type of text (narrative, expositive, informative, argumentative) do you use to promote multiple document comprehension?*

Section Five: Evaluation

Regarding the communicative competence: "Analyze information and use language to make decisions. It is expected that students develop their capacity to analyze and make a critical judgment about information from different sources in order to make decisions that are informed, reasoned, and referenced to collective interests and norms in different contexts. This should be supported by different sources of information, written and spoken".

29. Do you evaluate the sources of information that your students consult?
Yes_____. No_____.*

30. Do you teach you students' strategies to evaluate the sources they consult?
Yes_____, which ones? No_____. What is the reason? *

31. Do you evaluate multiple document comprehension? Yes_____, which ones? No_____. What is the reason?*

32. If you answer positively to question 29, what aspects do you evaluate? *

33. If you answer positively to question 31, what evaluation strategies or instruments do you use to asses contents, strategies and attitudes? (Ignore this question of the answer to question 31 was negative). *

34. What type of evaluation do you use? (if the teacher cannot answer or gives wrong answers, ask the following questions: why do you evaluate? What do you evaluate for? What do you use to evaluate? Who evaluates? In what moment do you evaluate?) *

-END OF THE INTERVIEW-

3.1.1.5 Interview piloting

Piloting is an important step to identify mistakes and prevent them from escalating. The pilot test allows researchers to find weaknesses and limitations in the interview guide and to refine the questions it contains (Turner, 2010). Through piloting several goals can be accomplished before full implementation occurs. Arthur and Nazroo (2003) focus the pilot test in testing the scope of the interview guide. They consider that after piloting the instrument, it is important to make sure that the interview guide compiles the type of data that is needed to reach the objectives. However, some other adjustments arise from a pilot test, such as adding or deleting topics, reviewing the duration of the interview, and changing the order of the topics (Arthur & Nazroo, 2003).

The interview was piloted with two middle school teachers, one Spanish teacher from a general middle school, and one Civic and ethical education teacher from a technical middle school. The interviews were recorded and later transcribed; finally, they were analyzed individually. As a result, the interview guide was modified; a post-piloting, and final version of the interview guide was designed. The first change was done in the second section. An item was added to inquire about the institutions where teachers had obtained their studies: item number *10. Institution where the teacher has obtained his/her degrees.* The purpose of the question was to identify any relation between academic institutions and teachers' knowledge and practice regarding multiple document comprehension.

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While analyzing the interviews, we acknowledged the importance of the topic being studied and teachers' perception about multiple document reading comprehension practice. Thus, it was decided to add another question in Section Four: Practices' perception. When being asked if students were required to read different texts, Teacher A mentioned the following example of what she asked their students to do: "We are going to see this topic (certain topics) and I want you to research the topic on the web". This statement made us think of the possible relation between certain topics and the practice of reading multiple documents: question 30. *What type of topics do you use to promote multiple document comprehension?*

In Section Five: Evaluation, the only addition done was the notes for the interviewer to delve deeper into how the teacher evaluates the sources, and evaluation strategies of the source that the teacher teaches the students. Lastly, a general question asking for additional comments was included. All of these changes were not major changes. According to Arthur and Nazroo (2003), if the pilot interviews do not undergo radical changes in relation to the final implementations, they can be included in the final data analysis. Therefore, the piloting interviews were also included among the eleven interviews that we carried out as part of the final implementation.

3.1.1.6 Final version of the interview

Besides the changes already mentioned, the last version of the interview guide included a note for the interviewer at the beginning of Section Four: Teachers' perceptions about multiple document comprehension practice. The note was added to remind the interviewer to emphasize that the questions in the section are in relation to multiple documents comprehension teaching and practice. In the same section, another note was added to explain that the tasks indicated in question 23 referred to those performed in class or as homework. *What activities or tasks do you consider that require reading more than one text in a comparative or integrated manner?* In Section Five: evaluation, the question *Do you evaluate the sources that your students use?* was considered to be too general. It was replaced by *Do you evaluate the sources that your students use in the tasks you give them?* to make it less ambiguous. In the same section, the following question was found to be

too theorized: *Do you evaluate multiple document comprehension? Yes_____, which ones? No_____. What is the reason?* Therefore, the following note was added to the question: *It means, you evaluate the integration or relation that your students establish among the different sources or texts.*

Three modalities of the last version of the interview were implemented: one for Spanish, one for science, and one for history teachers. The main difference among them is that the competences quoted at the beginning of section five differ according to the subject that the interview guide is targeted to. Also, only the version for Spanish teachers included examples of activities to contextualize the teachers. The rest of the questions were exactly the same. The final version of the interview is below.

-INTERVIEW GUIDE-

Section One: School data

1. Name of school: _____
2. Type of school: Mark with an 'X'

   __Public General   __Public Technical __*Telesecundaria* __Private middle school
3. Municipality:_____
4. School zone:_____
5. Margination Level: _____

Section Two: Socio demographic data

6. Gender:_____
7. Age:_____
8. Previous training:_____
9. Last degree obtained:_____
10. Institution where the teacher has obtained his/her degrees_____
11. Years of teaching experience:_____
12. Subjects taught by the respondent:_____
13. Grades the respondent works with: _____
14. Number of groups the respondent works with:_____
15. Approximate number of students the respondent works with:_____

Section Three: Previous training

16. Did you received training to teach reading comprehension during your bachelor's degree program? Yes_____ No_____.

17. That being the case, did you received training to teach multiple document comprehension during your bachelor's degree program? Yes_____. No_____.

18. In the last five years, have you received training to teach reading comprehension? Yes_____. No_____.

19. In the last five years, have you received training to teach multiple document comprehension? Yes_____. No_____.

20. According to answers to questions 17 and 18, mark with an 'X' in the corresponding space

Type of training	Reading comprehension	Multiple document comprehension
Courses		
Workshops		
Diploma course		
Graduate studies		

21. Would you explain to us what has the training you have received consisted of?

22. Do you consider that the training you have received is pertinent to your teaching practice? In terms of promoting reading comprehension, and specifically, multiple document comprehension.

Section Four: Teachers' perceptions about multiple document comprehension practice

Note for the interviewer: Emphasize during the interview that the questions are centered in multiple document comprehension.

23. What is your notion (idea) about the processes that are involved in multiple document comprehension? (comprehension of multiple texts that can be texts articles, videos, magazine articles, newspaper articles)

24. What activities or tasks (in class or homework) do you consider that require reading more than one text in a comparative or integrated manner?

This section is only included in the version for Spanish teachers

As an example:

In first grade, unit 2, "integrate information into a monograph" is included as social practice of the language. Also, as part of the production for its development, *the record of the information that supports that the inquiry was done in multiple documents* is included.

In second grade, unit 1, "analyze and compare information about a topic in order to write articles" is included as social practice of the language. Additionally, *the integration of information from multiple documents in an original writing* is included as part of the reflection topics.

In third grade, unit 1, "write an argumentative essay" is included as social practice of the language. And *differences in the processing of a topic in multiple documents* is included as part of the reflection topics.

25. Do you use teaching strategies/activities to promote multiple document comprehension? Yes_____. That being the case, mention some examples. No_____.

26. Do you teach multiple document comprehension to your students? (strategies mean the activities you teach students to do. For example, looking for the main idea and others) Yes_____. No_____. That being the case, give examples and tell us how you develop them.

27. Do you request to your students tasks that involve multiple document comprehension? Yes_____. No_____. That being the case, give examples and tell us how you develop them.

28. If you answer positively to questions 3 and/or 4, and/or 5, what type of sources do you use to promote multiple document comprehension? (Example: internet sources, blogs, textbook)

29. If you answer positively to questions 3 and/or 4, and/or 5, what type of text (narrative, expositive, informative, and argumentative) do you use to promote multiple document comprehension?

30. What type of topic do you use to promote multiple document comprehension?

Section Five: Evaluation

As an example, to contextualize source evaluation activities, we quoted the following competence:

[Version for Spanish teachers] Regarding the communicative competence: "Analyze information and use language to make decisions. It is expected that students develop their capacity to analyze and make a critical judgment about information from different sources in order to make decisions that are informed, reasoned, and referenced to collective interests and norms in different contexts. This should be supported by different sources of information, written and spoken".

[Version for Science teachers] Regarding the scientific competence: "Comprehension of phenomena and natural processes from a scientific perspective. It implies that students acquire knowledge, abilities, and attitudes that allow them to better understand natural phenomena and relate this learning to everyday life so that they understand that science can give answers to their questions and explain the daily natural phenomena related to life, materials, interactions, environment and health. In this process, students bring up questions and look for answers about diverse phenomena and natural processes in order to strengthen their comprehension of the world. Analyzing, from a systematic perspective, students will also be able to develop their level of representation and interpretation about the phenomena and natural processes. Likewise, students will be able to design and conduct projects, experiments and research. Also, they will be able to argue using scientific terms accurately and using reliable sources of information in different contexts and situations in order to develop new knowledge".

[Version for History teachers] Regarding the competence: "Management of history information. The development of this competence allows the mobilization of knowledge, abilities and attitudes to critically select, analyze and evaluate sources of information, and to express points of view based on the past"
Formulate and answer questions about the life of human being in different times.
- Select, organize and classify relevant information from written, oral and graphic testimonies such as books, manuscripts, photographs, clothing, buildings, monuments, and etcetera
- Analyze, compare and evaluate different sources and interpretations about facts and processes of the past
- Use historic concepts in their contexts
- Describe, explain, represent and express conclusions using different sources of information.

31. Do you evaluate the sources of information that your students use? Yes_____.
No_____.

32. Do you teach your students strategies to evaluate the sources they consult? Yes_____, which ones? No_____. What is the reason?

33. Do you evaluate multiple document comprehension? Yes_____, which ones? No_____. What is the reason?

34. If you answer positively to question 31, what aspects do you evaluate?

35. If you answer positively to question 33, what evaluation strategies or instruments do you use to evaluate content, strategies and attitudes? (omit in case of negative answer to the previous question).

36. What type of evaluation do you use? (if the teacher cannot answer or gives wrong answers, ask the following questions: why do you evaluate? What do you evaluate for? What do you use to evaluate? Who evaluates? In what moment do you evaluate?)

-END OF THE INTERVIEW-

After the interviews were administered, we analyzed the information so as to strengthen the conceptualization of the construct. For instance, Teacher Beatriz described multiple document comprehension as important: "It is very important. Especially because of the content we have in the curriculum". Meanwhile Teacher Claudia stated that multiple document comprehension allows students to "better understand the topic". For teacher Wilbert multiple document comprehension allows students to build their own criteria about a topic. Teacher José stated "[multiple document comprehension] broadens students' panorama". In general, based on teachers' answers, they have the idea that multiple document comprehension allows students to better comprehend content. However, the interviews did not reflect a conceptualization of the construct to be measured. They have a practical approach instead; multiple document comprehension is practiced through activities.

Findings from interviews revealed input about the activities that teachers do to promote multiple document comprehension. The most common were debates, essays and projects. In relation to evaluation, teachers mostly use rubrics, check tables and a record of evidence made by the students. Some teachers knew that multiple document comprehension is a competence that they have to teach since it is required in the curriculum, but they could not elaborate on the processes involved in it. These findings provided valuable information that was translated into the items of the scale. Although, no conceptualization of the construct was reported, the interview gave valuable information about teaching and evaluation practices that teachers perform. Likewise, even though these sections were not included in this thesis, data collected from interviews gave important insight

about school factors and non-school related factors that affect multiple document reading comprehension. This information was used for the parent research project of this thesis.

3.2 Phase two: Scale design

Based on the findings from the design and the administration of the interview (phase 1) and on the objective of the scale, five dimensions were determined. The definition of the target population also influenced the wording of the items, the content and the instructions of the scale. The validation of the scale is strongly related to the guidance provided by the conceptualization of the construct and the definition of the target population while devising the items. Devising the items allowed us to accomplish second and third research specific objectives:

1. To define the construct intended to be measured
2. To determine the dimensions of the construct to be measured
3. To devise and score items for each dimension
4. To conduct statistical tests to validate the scale
5. To pilot the scale with a sample of English teachers at bilingual middle schools
6. To adjust the scale in accordance with the validation testing results

3.2.1 Devising the items

After collecting information from different sources, such as the interview and experts' knowledge, we move on to devise the items. First, the variables and dimensions of the scale were established. Hernández et al (2006) state that it is important to review the variables. Variables are measurable and observable properties that vary and are defined in two ways: conceptually and operationally. Variables must be defined to ensure that the concept is not understood differently from the definition given by the researcher. Conceptual definitions were taken from dictionaries

or specialized literature; however, they are not set in the context. Operational definitions fill this gap by contextualizing the concepts. They describe the operations required to measure the variable.

The variables drawn from the scale objective were: a) multiple document comprehension teaching practices, and b) multiple document comprehension evaluation practices. Additionally, the research team considered the addition of c) sociodemographic data and d) teachers' previous training. These variables were defined conceptually and operationally; then, taking into account these definitions and the findings from the interview, items were written. Each dimension focused on a specific variable with the purpose of inquiring into it. Each dimension is explained next.

3.2.2 First dimension

The scale is composed of six dimensions. The first dimension named "general information" was developed with the purpose of gathering information about the demographics, the participants and school variables. Demographic data required are gender and age. Likewise, the individual variables of academic background, years of teaching experience, and the teacher's previous training regarding multiple document comprehension, are asked in the first dimension. Lastly, this part of the scale inquiries also about the subjects taught, teaching grade, number of students taught per group, number of groups taught per school year. Hernández et al (2006) determine that demographic questions are mandatory in order to identify the respondent. The data gathered from the first dimension is analyzed in relation to the multiple document comprehension teaching and evaluation practices in order to answer the second and third research questions of this study.

3.2.3 Second dimension

The second dimension focuses on the variable: "Training for multiple document comprehension teaching". The purpose of this dimension is to identify whether teachers' received training to use and to teach multiple document comprehension strategies and when they received it (during their bachelor's degree, master's degree, doctoral studies, self-taught, or informally among peers). Table 5 illustrates the conceptualization of the variables in this dimension.

Table 5.

Conceptual and operational definitions of dimension two

Theory	Models	Factors	Operational definitions
Ruddell and Unrau(2013) **Sociocognitive Interactive Model** "Knowledge of literature and content areas constitutes a store of information critical to instruction. The knowledge is acquired through academic experiences and enriched through personal and world knowledge" (p. 1043)	Goldman, Lawless, Manning (2013) *The Domain Model*	**Gathering:** "Gathering resources refers to finding, identifying, and locating information to address the task" (p. 183)	Education level in which the teacher received training to use and teach multiple information gathering strategies.
	Perfetti, Rouett, and Britt (1999) *The Document Model* Goldman, Lawless, and Manning (2013) *The Domain Model*	**Intertextual representation:** "Links between documents and the situations they describe" (p.104)	Education level in which the teacher received training regarding multiple document comprehension and regarding the design of instruments to evaluate multiple document comprehension
	Rouet and Britt (2011) *MD-TRACE Model*	**Source evaluation:** Evaluate the reliability and accessibility of the sources through quick scans and in-depth reading of the documents (Rouet & Britt, 2011 as cited in	Education level in which the teacher received training to use and teach strategies to evaluate the reliability of multiple sources, and to design instruments

	Vega, Bañales & Reyna, 2013)	to evaluate how students evaluate the reliability of the source.
Goldman *et al.* (2012) ***The Domain Model***	"Efforts to use information about a source, including its topic (indicated in title or brief summary), who wrote it, and when it was published to determine an initial estimation of its usefulness" (p.13)	
Goldman *et al.* (2012) ***The Task Model.***	**Scaffolding and instructions:** "The scaffolding parameter characterizes the type and degrees of scaffolding provided in the task. Finally, the instruction parameter designates the specific attributes of the instructions provided to students" (p.185)	Education level in which the teacher received training to use didactic methods to teach multiple document reading comprehension

Source: prepared by the author

As explained before, the variables are defined within a range of theories and models. The Sociocognitive Interactive Model of Ruddel and Unrau (2013) functioned as the main theory to support this dimension. Part of this theory is teachers' *knowledge of teaching strategies*, these strategies can be used to reach specific instructional goals. Teachers' knowledge was included in the scale as the teaching practices and strategies used to reach multiple document comprehension. Both, the *knowledge of literature and content areas* and the *knowledge of teaching strategies* support the second dimension in the terms previously described. However, specific parts of other models, defined as factors in this work, were used in order to be more specific in terms of the teaching and evaluation practices.

The first model included was *The Domain Model* by Goldman, Lawless and Manning (2013). The Domain Model is an evidence-centered design whose purpose is to assess multiple document comprehension. The model first determines the skills and knowledge which are translated into components that indicate competence in the domain. One of the factors is *Gathering resources* which is defined by Goldman, Lawless and Manning (2013) as "finding, identifying, and locating information to address the tasks" (p. 183). From this definition, and its integration in the *Sociocognitve interactive model*, the first operational definition was determined: 'Education level in which the teacher received training to use and to teach gathering strategies'. Two items were drawn from this definition (items 2 and 5).

Then, the *Documents Model* (Pertetti, Rouet, & Britt, 1999) was inserted, specifically the factor of *intertextual representation* defined in the model. *Links* connect *document nodes* to one another, this connection allows the integration and comprehension of multiple documents. Linking nodes is a multiple document comprehension strategy; therefore, when integrated with teacher's *knowledge of literature and content areas* and the *knowledge of teaching strategies,* a second operational definition is obtained. The definition obtained was 'Education level in which the teacher received training regarding multiple document reading comprehension and the design of instruments to evaluate multiple document reading comprehension' and was tagged ad Intertextual representation. Items 1 and 7 were written based on this definition.

The MD-TRACE (Rouet & Britt, 2011) was integrated through the addition of another multiple document comprehension strategy, *source evaluation*. Rouet and Britt (2011), explain that the evaluation of the source consists in evaluating the reliability and accessibility of the sources through quick scans and an in-depth reading of the documents (as cited in Vega, Bañales and Reyna, 2013). In the same way, according to Perfetti, Rouet and Britt (1999) a source slot is created while the reader creates the *documents model.* The source slot is filled with information about the identification, author of the author, the setting identification, and the form of the document. These aspects are taken into account when evaluating the source. The conceptual definitions given by Rouet and Britt (2011) complemented by Perfetti, Rouet and Britt (1999) and integrated to the teacher's knowledge, provides the following operational definition: 'Education level in which the teacher was trained to use and teach strategies to evaluate the reliability of multiple documents, and design instruments to evaluate how students assess the reliability from the source'. Items 3, 6 and 8 stem from this definition.

The last factor integrated into the Sociocognitive Interactive Model was defined as *scaffolding and instructions.* It refers to "the types and degrees of scaffolding provided in the task" and to "the attributes of the instructions provided to students" (Goldman *et al.*, 2012, p.185). These parameters are comprehended as didactic methods in the scale. The last operational definition of the dimension is: 'Education level in which the teacher received training to use didactic methods to teach multiple document reading comprehension' and it is the basis of item 4.

3.2.4 Third dimension

The third dimension of the scale is called "Multiple document comprehension teaching and evaluation practices" and its purpose is to measure different aspects of multiple document comprehension teaching and evaluation practices. The aspects to be measured are organized in the following three sub dimensions:

3.1 Teacher's perceived self-efficacy to teach multiple document comprehension

3.2 Frequency of multiple document comprehension activities

3.3 Planning of multiple document comprehension activities

3.2.4.1 First sub dimension: Teacher's perceived self-efficacy to teach multiple document comprehension

The purpose of this sub dimension is to identify teacher's beliefs about his capability to teach the different aspects of multiple document comprehension. Rudell and Unrau (2013) stated in their Sociocognitive Interactive Model that "teachers hold beliefs based on opinions, assumptions, and convictions. Teachers' beliefs have a direct impact on the affective conditions that influence the shape the purpose of instruction, the plan and the construction of the teachers' strategy" (p.1041). Therefore, teachers' beliefs on their perceived efficacy in teaching aspects of multiple document comprehension will likely determine their intentions, their planning and organization and the construct of their strategy. The statement about teachers' beliefs is integrated, as in the second dimension, to factors in order to define the variables operationally. *Gathering* generated items 9,

10, 19 and 20; *intertextual representation* gave rise to items 11 and 21; *source analysis* coined items 13 and 23; *source evaluation*: items 12 and 22; and *scaffolding and instructions*: items 14, 15, 16, 17 and 18.

Table 6.

Conceptual and operational definitions of sub dimension 3.1

Theory	Model	Factor	Operational definition
Ruddell and Unrau(2013) **Sociocognitive Interactive Model** "The teacher holds beliefs based in opinions, assumptions, and convictions. Teacher's beliefs have a direct impact on the affective conditions that influence and shape the teacher's instructional purpose, plan, and strategy construction" (p. 1041)	Goldman, Lawless, Manning (2013) *The Domain Model*	**Gathering**: "Gathering resources refers to finding, identifying, and locating information to address the task" (p. 183)	Teacher's perceived efficacy to search for online sources and to teach online searching strategies for multiple document reading comprehension. Teacher's perceived efficacy to search for physical sources and to teach paper-based sources searching strategies for multiple document reading comprehension.
	Perfetti, Rouett, and Britt (1999) *The Document Model.* Goldman, Lawless, and Manning (2013) *The Domain Model* Goldman *et al.* (2012) *The Task Model.*	**Intertextual representation:** Links between documents and the situations they describe.	Teacher's perceived efficacy to identify (use) and to teach multiple document Reading comprehension strategies.

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Rouet and Britt (2011) *MD-TRACE Model*	**Source analysis:** Determining the reliability and relevance of a source based on its content. Some sources may contain information that is relevant and useful as well as information that is not. The learner has to critically evaluate the content from this perspective	Teacher's perceived efficacy to identify (use) and to teach strategies to evaluate the content reliability of multiple documents.	
Goldman *et al.* (2012) *The Domain Model*	"Some sources may contain information that is relevant and useful as well as information that is not. The learner has to critically evaluate the content from this perspective" (p. 14)		
Goldman *et al.* (2012) *The Task Model.*			
Rouet and Britt (2011) *MD-TRACE Model*	**Source evaluation:** Evaluate the reliability and accessibility of the sources through quick scans and in-depth reading of the documents (Rouet & Britt, 2011 as cited in Vega, Bañales and Reyna, 2013)	Teacher's perceived efficacy to identify (use) and teach strategies to evaluate the relevance and reliability of the sources based on the source information.	
Goldman *et al*. (2012) *The Domain Model*	"Efforts to use information about a source, including its topic (indicated in title or brief summary), who wrote it, and when it was published to determine an initial estimation of its usefulness" (p.13)		
Goldman *et al.* (2012) *The Task Model.*			

	Goldman *et al.* (2012) *The Task Model.*	**Scaffolding and instructions:** "The scaffolding parameter characterizes the type and degrees of scaffolding provided in the task. Finally, the instruction parameter designates the specific attributes of the instructions provided to students" (p. 185)	Teacher's perceived efficacy to design and use lesson plans that involve multiple document reading comprehension. Teacher's perceived efficacy to design and use instruments to assess multiple document Reading comprehension. Teacher's perceived efficacy to use didactic methods to teach multiple document reading comprehension.

Source: prepared by the author

3.2.4.2 Second sub dimension. Frequency of multiple document comprehension activities

The second sub dimension explores the frequency with which teachers include multiple document comprehension activities in class and in their assignments. *Gathering* generated items 24 and 25; *intertextual representation* coined items 26, 27, 30 and 31; and *source evaluation* gave rise items 28 and 29.

Table 7.

Conceptual and operational definitions of sub dimension 3.2

Theory	Models	Factors	Operational definition
Ruddell and Unrau(2013) **Sociocognitive**	Goldman, Lawless, Manning (2013)	**Gathering:** "Gathering resources	Frequency with which teachers include in-class

Interactive Model	*The Domain Model*	refers to finding, identifying, and locating information to address the task" (p. 183)	and homework activities that require students to search for physical and online sources.
	Goldman *et al.* (2012) **The Task Model** Perfetti, Rouett, and Britt (1999) ***The Document Model.***	**Intertextual representation:** "Links between documents and the situations they describe" (p.104)	Frequency with which teachers include classroom activities homework that require students to synthesize information from multiple documents.
	Goldman *et al*. (2012) ***The Domain Model***	"Synthesis refers to determining how information from individual sources relates to information from other sources; it implies comparison and contrast to determine if information is consistent or conflicting and in what way" (p. 14)	

	Rouet and Britt (2011) **MD-TRACE Model**	**Source evaluation**: Evaluate the reliability and accessibility of the sources through quick scans and in-depth reading of the documents (Rouet and Britt, 2011 as cited in Vega, Bañales and Reyna, 2013)	Frequency with which teachers include classroom and homework activities that require students to evaluate the reliability and relevance or sources based on source information.
	Goldman *et al*. (2012) **The Domain Model**	"Efforts to use information about a source, including its topic (indicated in title or brief summary), who wrote it, and when it was published to determine an initial estimation of its usefulness" (p.13)	

Source: prepared by the author

3.2.4.3 Third sub dimension: Planning of multiple document comprehension activities

This dimension refers to the frequency with which teachers plan activities that consider different factors of multiple text comprehension, such as gathering, analysis of sources, evaluation of sources, and intertextual representation. *Gathering* gave rise to items 32, 33, 34 and 51;

intertextual representation generated items 36, 37, 38, 39 and 50; *source analysis* coined items 45, 46, 47, 48 and 49; and *source evaluation*, items 35, 40, 41, 42, 43, 44.

Table 8.

Conceptual and operational definitions of sub dimension 3.3

Theory	Models	Factors	Operational definition
Ruddell and Unrau(2013) **Sociocognitive Interactive Model**	Goldman, Lawless, Manning (2013) *The Domain Model*	**Gathering.** "Gathering resources refers to finding, identifying, and locating information to address the task" (p. 183)	Teachers plan comprehension activities by finding, identifying and locating various sources of information considering factors, such as ease of access.
	Perfetti, Rouett, and Britt (1999) *The Document Model.*	**Intertextual representation:** Links between documents and the situations they describe.	Teachers plan activities by considering the nature of the intertextual links across the documents they select.
	Goldman, Lawless, Manning (2013) *The Domain Model*	"Synthesis refers to determining how information from individual sources relates to the information in other sources; it involves comparison and contrast to determine	

	whether and how information is consistent or conflicting" (p. 14)	
Rouet and Britt (2011) *MD-TRACE Model*	**Source analysis:** determining the reliability and relevance of a source based on its content.	Teachers plan activities by evaluating the content reliability of multiple documents.
Goldman *et al*. (2012) *The Domain Model*	"Some sources may or may not contain relevant and useful information. The learner has to critically evaluate the content from this perspective" (p. 14)	
Rouet and Britt (2011) *MD-TRACE Model*	**Source evaluation**: Evaluate the reliability and accessibility of the sources through quick scans and in-depth reading of documents (Rouet & Britt, 2011 as cited in Vega, Bañales & Reyna, 2013)	Teachers evaluate the reliability and relevance of sources based on the source information and visual features

	Goldman, Lawless y Manning (2013) **The Domain Model.** **The Student Model.**	"Efforts to use information about a source, including its topic (indicated in title or brief summary), who wrote it, and when it was published to determine an initial estimation of its usefulness" (p.13)

Source: prepared by the author

3.2.5 Fourth dimension: Evaluation of multiple document comprehension

This dimension refers to the types of evaluation that teachers reported using to assess students' multiple text comprehension. The types of evaluation that the teachers can choose from are: self-evaluation, formative evaluation, summative evaluation, co-evaluation, and heteroevaluation. However, what matters as variables are not the types of evaluation but the dimensions of multiple document comprehension that teachers report that they evaluate. The table below shows the relation among conceptual definitions that support the operational definitions. *Work product parameter* generated item 57; *interpreting the task*: item 54; *intertextual representation* coined item 52 and 55; and *source evaluation*: item 56.

Table 9.

Conceptual and operational definitions of dimension four

Theory	Models	Factors	Operational definition

Ruddell and Unrau(2013) **Sociocognitive Interactive Model**	Goldman *et al*. (2012) *The Task Model.*	**Work product parameter.** Specifies the properties of the product produced by the student.	Teachers evaluate the use of quotations and quoting conventions as well as appropriate connectors to compare and contrast sources in multiple document tasks.
	Goldman *et al*. (2012) *The Domain Model*	**Interpreting the task.** "[It] is the process whereby the learner comes to understand the objectives, limitations, and boundaries of the task or problem and the type of information that is relevant to address it. One problem is the degree to which learners interpret the tasks and adopt the objectives of the task that reflect the intended task as conceived by the creator of the task" (p.	Teachers assess students' understanding of instructions for multiple document tasks.

13)

Perfetti, Rouett, and Britt (1999) *The Document Model.*	**Intertextual representation:** "Links between documents and the situations they describe" (p.104)	Teachers evaluate the nature of intertextual links established by students and the processes used to do so during multiple document tasks.
Goldman, Lawless, and Manning (2013) *The Domain Model*	"Synthesis refers to determining how information from individual sources relates to information from other sources, involves comparison and contrast to determine if the information is consistent or conflicting" (p. 14)	

| | | Rouet and Britt (2012) **MD-TRACE Model** Goldman *et al.* (2012) **The Task Model.** | **Source evaluation**: Evaluate the reliability and accessibility of the sources through quick scans and in-depth reading of the documents (Rouet and Britt, 2011 as cited in Vega, Bañales & Reyna, 2013) | Teachers evaluate students' ability to choose reliable sources for multiple document tasks. |

Source: prepared by the author

The items were written based on conceptual definitions of different factors of the models and theories that gave rise to operational definitions. Table 10 below summarizes the theoretical structure of the scale and the items each operational concept generated.

Table 10.

Theoretical structure of the scale

Dimension	Sub dimension	Factors	Item
2. Training for multiple document comprehension teaching		Gathering	2,5
		Intertextual representation	1,7
		Source evaluation	3,6,8
		Scaffolding and instructions	4
3. Multiple document comprehension teaching and	3.1 Teachers' perceived self-efficacy to teach	Gathering	9,10,19,20
		Intertextual representation	11,21
		Source analysis	13,23

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evaluation practices	multiple document comprehension	Source evaluation	12,22
		Scaffolding and instructions	14,15,16,17,18
	3.2 Frequency of multiple document comprehension activities	Gathering	24,25
		Intertextual representation	26,27,30,31
		Source analysis	28,29
	3.3 Planning of multiple document comprehension activities	Gathering	32,33,34,51
		Intertextual representation	36,37,38,39,50
		Content evaluation	45,46,47,48,49
		Source evaluation	25,40,41,42,43,44
4. Evaluation of multiple document comprehension		Work product parameter	57
		Interpreting the task	54
		Intertextual representation	52, 55
		Source evaluation	56

Source: prepared by the author

3.2.6 Wording of items

Regarding items wording, Santaolària and Doval (2003) explain that it is important to take into account a series of aspects.

1. First, the vocabulary and grammar must consider the characteristics of the target population.
2. Each word and statement used should be understood by the target population.
3. Scale wording should make responding the scale an easy task. Therefore, items must be short, simple, clear and direct.

4. Each item must express only one idea at a time.
5. Items must be unequivocal. Ambiguity must be avoided.
6. Statements written in negative form must be avoided.
7. Items must express attitudes, preferences, feelings or beliefs. Expressing real facts must be avoided.
8. Avoid using abstract terms whenever is possible. For instance: always, never, nobody.
9. Respectful, polite and correct language must be used.

After having established the dimensions along with the variables and their conceptual and operational definition, items were written. Two experts in multiple document comprehension theories wrote a first version of the scale (appendix 1) of the instrument derived from their knowledge of the theories related to multiple document comprehension, the information collected from the interviews, and the SEP curricula guides from middle school. Subsequently, the first version was reviewed by experts in the design of scales. The aim of these sessions was reviewing the wording, editing the format and assigning a rating scales. There were three review sessions; as a result, some modifications to the scale were suggested.

The first version of the scale was composed of 84 items distributed six dimensions. Table 11 shows the organization of the first version of the scale

Table 11.

Dimensions and items of the first version of the scale

Dimension	Number of items
1. General Data	10
2. Training for multiple document comprehension teaching	17
3.1 Teachers' perceived self-efficacy to teach multiple document comprehension	15
3.2 Frequency of multiple document comprehension activities	8

Source: prepared by the author

The first change was made in the second dimension. The items of this dimension inquired about the training teachers had received in terms of teaching multiple document comprehension. It was concluded that neither the format, nor the wording was appropriate and nor clear enough to be easily understood. For example, there were three items designed to ask about teachers' training to teach strategies to evaluate the reliability of the source of information:

> 6.   *Mis estudios de grado (licenciatura, maestría, doctorado) me prepararon para utilizar métodos didácticos (ej. aprendizaje colaborativo) para enseñar estrategias de evaluación de la confiabilidad de varias fuentes.*
>
> 12.   *Mi formación para enseñar estrategias de evaluación de la confiabilidad de varias fuentes la he adquirido informalmente de otros compañeros.*
>
> 14.   *Necesito más capacitación para enseñar estrategias de evaluación de la confiabilidad de varias fuentes.*

This group of items were worded similarly to those from other groups within the same dimension, which was considered to be confusing. Nevertheless, it was necessary to change the format to ease the task of answering this section. These three items were reduced to one item by keeping the variable to be measured and assigning a nominal scale to the item, as shown below. This modification was also applied to the rest of the dimension. Thus, the 17 items included in the dimension that were on the previous version of the scale were reduced to six items with a nominal scale in the second version of the scale.

> **1=No tengo esa preparación   2=Licenciatura   3=Maestría   4=Doctorado**
> **5=Autodidacta**

6. Enseñar estrategias de evaluación de la confiabilidad de la información de varias fuentes.	1	2	3	4	5	6

Some other modifications were made to the scale since it was found that teachers in public schools have activity guides called *Ficheros.* Thus, item 51: *Consulto ficheros (guías de actividades)* was added to sub dimension 3.3 "Planning of multiple document comprehension activities". There were also a few minimal wording changes in item 32 and 35. In the case of item 32. *Busco fuentes adicionales a las proporcionadas por la Secretaría,* the term *Secretaría* was replaced for *SEP,* which is the acronym for *Secretaría de Eduación Pública (Public Education Secretary). Secretaría* could be interpreted differently from the intended purpose, so it was decided to use *SEP* instead, as it is a term that all teachers know and interpret the same way. In the case of item 35. *Evalúo la confiabilidad de las fuentes que uso,* the change was made in the elimination of *que uso*, as it was found irrelevant.

Similarly, changes were made in dimension two "Training for multiple document comprehension teaching". Also, the format and wording of dimension four "Evaluation of multiple document comprehension" was modified. Each item specified an aspect to be evaluated and the type of evaluation that is used to evaluate that aspect. For instance:

> 1.   *Realizo una evaluación diagnóstica al inicio de cada proyecto para saber que habilidades poseen.*
> 2.   *Realizo una evaluación diagnóstica al inicio de cada proyecto para saber que conocen acerca del contenido del tema.*

This structure resulted tedious; we thus proposed to list the aspects and assign a nominal scale. The eleven items in the dimension were then reduced to six:

1=No lo evalúo   2=Diagnóstica   3=Formativa   4=Sumativa   5=Autoevaluación 6=Coevaluación   7=Heteroevaluación
52. Evalúo las estrategias (por ejemplo, usar organizadores gráficos) de lectura comparativa de varias fuentes de manera
53. Evalúo el conocimiento previo de los contenidos en el contexto de actividades de lectura comparativa de múltiples fuentes.

54. Evalúo que los alumnos entiendan las instrucciones de los proyectos que requieren la lectura comparativa de múltiples fuentes de manera
55. Evalúo la comprensión sintética de los temas que implican la lectura comparativa de múltiples fuentes.
56. Evalúo la confiabilidad de las fuentes que utilizó el alumno para la elaboración de un proyecto que implica la lectura comparativa de múltiples fuentes.
57. Evalúo el aprendizaje de aspectos lingüísticos como: uso de conectores, uso correcto de comillas para citar, formato de citas parentéticas, inclusión de referencias en actividades que implican la lectura comparativa de múltiples fuentes.

The outcome of the review by the experts was the second version of the scale, composed of 66 items. During the second review, minor format changes in dimension one were suggested to make it easier for teachers to answer the instrument. In the same dimension, a question to inquire about the amount of groups teachers usually teach was added:

9. Encierre el número de grupos que atiende por ciclo escolar *1 2 3 4 5 6 7 8 9 10   más de 10*

In dimension two "Training for multiple document comprehension teaching" two items were added:

2.   *Utilizar diferentes estrategias de búsqueda en internet para encontrar información académica pertinente.* 3.   *Utilizar diferentes estrategias para evaluar la confiabilidad de las fuentes (ejemplo reputación del autor, sitio de publicación) de las fuentes.*

These items were introduced to complement the dimension with the aspects that teachers could have learnt during their training.

Another change was made in sub dimension dimension 3.3 "Planning of multiple document comprehension activities" Item *10. Selecciono fuentes confiables y otras no tan confiables,* was not unequivocal, it asked two aspects at the same time and it presented two mutually exclusive aspects; thus, the item was discarded. Additionally, items 44, 49 and 50, in the fourth dimension

"Evaluation of multiple document comprehension" underwent minor wording changes because of redundant and obvious terms being used. All these items were deleted. After the second review of the second version, a third version with 68 items was accomplished.

The third version of the instrument was also reviewed by the experts in multiple document comprehension and the experts on scale design. The third review session was focused on assigning scales, pre coding the scales, and formatting to the whole instrument. In this review session only an open question was added to the dimension "Evaluation of multiple document comprehension" to deepen into the aspects teachers evaluate. No further changes were made. This was the last version designed (appendix 2). This version was included in the report of the first stage of the parent project of this thesis (Vega, Perales-Escudero y Correa, 2018).

3.2.7 Rating Scales and codification

The next step in the methodology is to allocate values on a scale. Likert scales, like the one being developed in this thesis, use rating scales. Each item is allocated a system of organized answer options to choose from. The options can express quality, quantity, agreement, frequency, importance and probability, among others (Santaolària & Doval, 2003).

Rating scales were defined in a collaborative working session; however, only the three sub dimensions of the third dimension were allocated a rating scale. Dimension two and Dimension four used nominal scales. Nominal scales can have two (dichotomous) or more (categorical) categories that serve with the purpose of classification. This type of scales differentiates differences among categories (Hernández et al., 2006). The dimension of General Data used nominal and numerical scales. The table below shows the types of scales and categories used in each dimension.

Table 12.

Types of scales and categories by dimension

Dimension	Sub dimension	Type of scale	Categories

1. General Data		Nominal scale, numerical variables.	Varied among each question
2. Training for multiple document comprehension teaching		Nominal scale	1 – I do not have training 2 - Bachelor's degree 3 – Master's degree 4 – Doctorate studies 5 – Self-taught 6 – Informally with peers
3. Multiple document comprehension teaching and evaluation practices	3.1 Teachers' perceived self-efficacy to teach multiple document comprehension	Rating scale	1 – Not capable 2 – A little capable 3 – Moderately capable 4 – Sufficiently Capable 5 – Highly capable
	3.2 Frequency of multiple document comprehension activities	Rating scale	1 – Never 2 – Almost never 3 – Occasionally 4 - Frequently
	3.3 Planning of multiple document comprehension activities	Rating scales	1 – Never 2 – Almost never 3 – Occasionally 4 – Frequently
4. Evaluation of multiple document comprehension		Nominal scale	1 – I do not evaluate it 2 – Diagnostic evaluation 3 – Formative Evaluation 4 – Self-evaluation 5 – Coevaluation

Source: prepared by the author

The first dimension gathered socio demographic and contextual data. This dimension includes 11 questions that were assigned either a nominal or numeral scale according to the aspect each question inquired about. For instance, question *1. Tipo de escuela secundaria* donde labora was assigned a nominal scale and its categories were *general pública, técnica pública, privada, telesecundaria* and *privada.* These type of categories are also defined as grouping variables; these variables allow grouping respondents into the categories defined. Meanwhile question *9. Encierre el número de grupos que atiende por ciclo escolar* used a discrete numerical variable that presented numbers from 1 to 10 as categories. Another example of numerical variable is in question 8. *Indique la cantidad promedio de alumnos que atiende por grupo*. This question used a continuous numerical variable. In this case, the categories were numeric ranges (less than 20, 20-30, 31-40, 41-50, 51-60 and more than 60).

Dimensions two and four were assigned nominal scales while the items were being developed. As explained before, the original format of the items in those dimensions was modified in order to ease the answering process. The third dimension was composed of three sub dimensions that were assigned rating scales. The categories in all three sub dimensions were organized in ascending order. Categories in sub dimension 3.1 Teachers' perceived self-efficacy to teach multiple document comprehension, express capability. While in the other two sub dimensions, the same rating scale is used and its categories express frequency.

Alongside rating scales, pre codification of the scale was done. Coding consist in assigning numerical values to categories which necessary in quantitative analysis (Hernández et al., 2006). Pre coding is possible when we are working with preestablished answer options, therefore, numerical values accompanied the answer options of the scale in dimensions two, three and four. Dimension one was not pre coded as it was considered that the addition of numerical values could

cause confusion. As shown in table 12, numerical values were assigned also in ascending order, starting in 1.

Once codes were set, experts discussed the format of the instrument. Hernández et al (2006) suggest that a scale includes a cover page showing the name of the scale and the institutions that support the research. It must also include an introduction that explains the purpose of the research, the importance of the respondent's participation, the person administering the instrument, confidentiality of the process, and general instructions. Other elements suggested are instructions through the scale and a thank-you note. Although the presentation and order of some elements were modified, the instrument included the information before mentioned, which was considered suitable by the experts. Specific instructions were included at the beginning of each dimension. Examples were not added because they were not considered necessary.

There are several ways in which the items can be presented, but it is important to consider that the purpose of the organization is to facilitate the task of responding. It was proposed to follow the format of a scale previously designed by one of the experts. The format used was the following:

I. *FORMACIÓN PARA LA ENSEÑANZA DE LA LECTURA DE COMPRENSIÓN DE MÚLTIPLES FUENTES*

Instrucciones: marque con una "X" según corresponda.

Indique dónde obtuvo la preparación sobre los siguientes aspectos de la lectura comparativa de múltiples fuentes

1=No tengo esa preparación 2=Licenciatura 3=Maestría 4=Doctorado 5=Autodidacta 6=De manera informal con los compañeros						
1. Conocimiento de estrategias de lectura comparativa de varias fuentes.	*1*	*2*	*3*	*4*	*5*	*6*
2. Utilizar diferentes estrategias de búsqueda en internet para encontrar información académica pertinente.	*1*	*2*	*3*	*4*	*5*	*6*
3. Utilizar diferentes estrategias para evaluar la confiabilidad de las fuentes (ejemplo reputación del autor, sitio de publicación) de las fuentes.	*1*	*2*	*3*	*4*	*5*	*6*
4. Utilizar métodos didácticos (ejemplo aprendizaje colaborativo) para enseñar la lectura comparativa de varias fuentes.	*1*	*2*	*3*	*4*	*5*	*6*

The second phase of the methodology concludes once the items are devised. Nevertheless, the scales, coding and format of the scale were defined in this phase as well. The result was a complete version of the instrument. However, this version had yet to be validated. Validation is required to make sure the items measure what they are intended to. Santaolària and Doval, (2003) label this process as selection of items, and divide it into two types: theoretical, which is done by experts on the matter; and empirical selection of items, which is an analysis based on the answers given to the instrument by a sample of people. The following two phases dig deeper in the selection of items.

3.3 Phase three: Theoretical selection of items

Based on the methodology of Santaolària and Doval (2003), the theoretical selection of the items is the next step to the design of the scale. The aim of this step is to ensure the validity of the scale through the opinions of experts. Moreover, it provides information that can assist designers of the instrument to decide whether to reject, improve or keep items in the scale, and it complements the empirical selection of items (Santaolària & Doval, 2003). Theoretical selection of items consists of gathering the opinions of the judges that would validate the instrument in terms of the relevance and representability of the items and their alignment with the objectives of the scale.

Four experts in multiple document comprehension were asked to evaluate the second, third and fourth dimensions of the instrument. The evaluation was divided into two parts. First, items presented in random order and the experts were asked to classify them into the factors they considered each element belonged to. If the judges agreed on the classification of the items into the factors they were extracted from, it was concluded that the categories of the attribute were clearly differentiated. Therefore, the items were considered valid to represent the factor that they were formulated for (Santaolària & Doval, 2003). Factors were defined in phase two of this methodology.

Then, experts were asked to evaluate the relevance degree of each item in relation to the attribute measured. A rating scale was established for them to evaluate: 3= very relevant, 2=

Somewhat relevant, 1= irrelevant, 0= no applicable. For the purpose of evaluation, and validation of items, experts were provided with a format (appendix 3).

Four experts evaluated dimensions two, three and four individually and submitted their evaluations. The first dimension evaluated was dimension two "Training for multiple document comprehension teaching". This dimension had four factors: *gathering, intertextual representation, source evaluation and scaffolding and instructions*. Table 13 shows experts' classification of the items for each factor. One of the experts omitted the evaluation of this dimension.

Table 13.

Classification by experts of items of dimension two

Factors	Original	Expert 1	Expert 2	Expert 3
Gathering	5, 2	5, 2	5,2	2
Intertextual representation	1, 7	1	-	-
Source evaluation	3,6, 8	3	3,6, 8	1, 3
Scaffolding and instructions	4	8, 6, 4	5, 2, 8, 3, 6, 1,4, 7	5, 6, 8, 4, 7

Source: prepared by the author

Contrasting experts' classification gave some insight about the validity of the items in relation with the attribute being measured. Items 2, 3, 4 and 5 were validated by two more experts. Items 1, 6 and 8 were validated by one expert out of three. Item 7 was not validated by any experts. This information was yet to be compared to the empirical selection of the items; therefore, items were not discarded or modified at this stage.

Dimension 3.1 "Teachers' perceived self-efficacy to teach multiple document comprehension" was evaluated by four experts. This dimension covered from item 9 to 23 and it included the factors of *gathering, intertextual representation, source analysis, source evaluation,* and *scaffolding and instructions*. The classification is shown in table 14.

Table 14.

Classification by experts of items of sub dimension 3.1

Factors	Original	Expert 1	Expert 2	Expert 3	Experts 4
Gathering	9, 10, 19, 20	9, 10	9, 10, 19, 20	9, 10	9, 10, 19, 20
Intertextual representation	11, 21	11	15, 17, 18, 21, 22, 23, 19	-	11, 21
Source analysis	13, 23	13	12, 19, 20	12, 13	13, 23
Source evaluation	12, 22	12	13, 23, 22, 12, 18, 19	11	12, 22
Scaffolding and instructions	14, 15, 16, 17, 18	14, 15, 16, 17, 18, 19, 20, 21, 22, 23	16, 20, 11, 15, 17, 10, 14, 9, 18	16, 20, 15, 21, 23, 22, 17, 14, 18, 19	14, 15, 16, 17, 18

Source: prepared by the author

All the items of this dimension were validated by two or more experts, except item 23 that was validated only by expert 4.

Dimension 3.2 "Frequency of multiple document comprehension activities" was the next dimension evaluated by all experts. This dimension was formulated upon the factors of *gathering, intertextual representation* and *source evaluation*, and it includes from item 24 to item 31.

Table 15.

Classification by experts of items of sub dimension 3.2

Factors	Original	Expert 1	Expert 2	Expert 3	Experts 4
Gathering	24, 25	24, 25	24, 25,	24, 25	24, 25

Intertextual representation	26, 27, 30, 31	24, 31, 27, 30, 25, 26	24, 31, 27, 30, 25, 26, 29	27, 26	31, 30, 27, 26
Source evaluation	28, 29	28, 29	27, 30, 28, 29	28, 29	28, 29

Source: prepared by the author

All of the items in this dimension were classified in their corresponding category by at least two experts; hence, all items were validated.

The following dimension evaluated was dimension 3.3 "Planning of multiple document comprehension activities". This dimension included 20 items, from item 32 to 51. There are four factors in this dimension: *gathering, intertextual representation, source analysis* and *source evaluation.* The classification is also illustrated in the table below.

Table 16.

Classification by experts of items of sub dimension 3.3

Factor	Original	Expert 1	Expert 2	Expert 3	Experts 4
Gathering	32, 33,34, 51	51, 32, 34	42, 39, 35, 41, 37, 33, 44, 51, 32, 47, 38, 46, 34, 40, 36	51, 32	33, 44, 51
Intertextual representation	36, 37, 38, 39, 50	39, 37, 47, 38, 46, 50, 36	39, 45, 37, 33, 48, 32 47, 46, 38, 49, 50, 36	39, 37, 38, 46, 49, 50, 36	36, 37
Source analysis	45, 46, 47, 48, 49	45, 44, 49, 50	43, 48, 36	45, 47	45, 43, 48
Source evaluation	35, 40, 41, 42, 43, 44	42, 35, 41, 33, 44, 43, 48, 40	42, 39, 35, 32, 40, 36	42, 35, 41, 33, 44, 43, 48, 34, 40	42

Source: prepared by the author

By observing the table, it can be noticed that most items were classified by more than two experts in agreement with the concepts they were written upon. Item 46, however, was not validated by any experts, while item 47 and 49 were only validated by one expert.

Dimension four "Evaluation of multiple document comprehension" included six items that represented five factors: *work product parameter, interpreting the task, intertextual representation,* and *source evaluation*. Two or more experts, except item 53, validated all the items in the dimension.

Table 17.

Classification by experts of items of dimension four

Factors	Original	Expert 1	Expert 2	Expert 3	Experts 4
Work product parameter	57	53, 55, 57	55	57	57
Interpreting the task	54	54	54	52, 53, 54, 55,	-
Intertextual representatio n	52, 55	52	52	52, 53, 55, 57	55, 57
Source evaluation	56	56	56	56	56

Source: prepared by the author

The majority of the items were validated by at least two experts. According to the experts' evaluation, items represent the part of the attribute they are meant to represent. The few items that were not considered valid were analyzed to decide whether to keep or modify them. This is explained in the Results chapter. The information provided by experts is valuable to secure the validity of the instrument, and it is suggested to complement it with the empirical selection of items, which is presented in the next phase of this work.

3.4 Phase Four: Empirical selection of items

The next phase to design the scale is the empirical selection of items (Santaolària & Doval, 2003). This phase is accomplished through piloting the scale with a sample of English teachers at different middle schools. In addition, this phase complements the theoretical selection of items previously done. The process consists of an empirical analysis based on the outcomes of the administration of the scale to a sample. The analysis is focused on the internal consistency and internal structure of the items, which will be explained in the next chapter of this thesis.

In the analysis, the characteristics of the items are as important as the characteristics of the sample that answers the scale. Experts emphasized that the characteristics of the sample must be similar to those of the target population of the instrument. Also, the size of the sample must be of at least twice that of the number of items in the scale items (Santaolària & Doval, 2003), but the methodology suggests that the bigger the sample, the more precise the analysis would come out. The instrument was composed of 57 items, excluding the questions in the dimension General Data. Thus, we needed at least 114 individuals. In the end, the instrument was administered to 293 individuals. The target population of the instrument are bilingual middle school teachers; however, the amount of bilingual schools in the state was not big enough to cover the number of teachers needed to validate the scale. Thus, finally, the sample used for the empirical analysis of this instrument were middle school teachers in the state of Quintana Roo.

3.5 Piloting the scale

The objective of piloting the instrument is to test the reliability of the instrument, but also, it allows researchers to evaluate the whole process of administration. The instrument was piloted with 293 middle school teachers in the state of Quintana Roo. The method of data collection was discussed by the research team in terms of economic resources and time availability. The most viable option was for the instrument to be self-administered. Teachers would receive the instrument and be given a period of time to answer it. Teachers were reached out in schools, so it was necessary to ask to the Secretariat of Public Education in Quintana Roo for permissions and help to apply the instrument. Permissions were given and the administration of the instrument started. The piloting phase took about six weeks. Once the data was collected, they were processed for analysis.

CHAPTER IV. RESULTS

This chapter describes the psychometric properties of the scale based on the answers given by the sample of the piloting. The data was analyzed using IBM's Statistical Package for Social Sciences (SPSS). The results are presented by dimension.

The first dimension of the instrument only contains grouping variables and some numerical variables. In this case, descriptive statistics could be generated such as frequencies and proportions. Averages could be drawn from questions three and five of the dimension, which inquiry about the age and years of teaching experience respectively. Grouping variables could be used to report results by type of school, gender, etc. However, given the nature of the variables, the dimension cannot be evaluated using Cronbach's alpha.

Items of the second dimension allow to identify whether or not teachers received training to perform a series of aspects on multiple document comprehension (items 1 to 8). Respondents indicated if they had or not received training, if they had received formal training at any of their educational levels (bachelor's degree, master's degree or doctorate studies), or if they had informal knowledge on these aspects. The numbers attached to the answer options (1 - I do not have training, 2 - Bachelor's degree, 3 – Master's degree, 4 – Doctorate studies, 5 – Self-taught, 6 – Informally with peers) are labels, not a scale. Therefore, the items could be analyzed by frequency, but the answers do not have inference in the reliability test.

The sub dimensions of the third dimension are described individually. Since these sub dimensions used rating scales, the answer options have a numeric label that corresponds to an ordinal scale; thus, these variables could be analyzed using Cronbach's alpha and factorial analysis, to evaluate the internal consistency and the internal structure of the scale.

Lastly, regarding the last dimension of the instrument, it is only possible to obtain frequency. The characteristics of the variables in dimension four "Evaluation of multiple document comprehension" are similar to the characteristics of variables in dimension two; the numerals that accompany the answer options of the dimension are labels, not an ordinal scale. Consequently, it is not possible to run a reliability test. The reliability test could only be applied to the three sub dimensions of the third dimension.

4.1 Internal consistency

Following, we will present the alpha obtained in each of the sub dimension from third dimension. Internal consistency is usually measured with Cronbach's alpha, this is calculated from the pairwise correlations between items. Santaolària and Doval (2003) explain that the internal conforms evidence that the items of the instrument are measuring the same attribute. Visualizing a correlational matrix of relations among items is a method to verify the internal consistency of the scale. Cronbach's alpha comprises this process into the following equation:

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\Sigma \sigma_j^2}{\sigma_t^2}\right)$$

       k= numbers of items of the instrument

       j= variance of items

       $\sigma^2_{j=}$ variance of the total score of the instrument

Alpha coefficient shows values between 0 and 1. On the one hand, 0 indicates that the instrument has not internal consistency; it means items are not correlated. On the other hand, 1 denotes total consistency among items; however, total consistency means that items are redundant or repeated and that they are not contributing to the scale. The accepted values that indicate optimal internal consistency establish 0.75 as the minimum and a maximum of 0.90 (Nunnally, 1978 as cited in Santaolària & Doval, 2003). Nevertheless, these values are orientative. According to García (2006, as cited by Vega, Perales-Escudero & Correa, 2019), acceptable values depend on the scale's objectives. The author proposes values between 0.80 and 0.90 as acceptable, adding that in the case of individual-level decisions, values of 0.95 are acceptable, as well.

      Different statistical software develops the equation and releases the results automatically. We used IBM's Statistical Package for Social Sciences (SPSS) to process the data and obtain Cronbach's alpha. Once the instrument was administered, the data was stored in a data base. Codes were defined in all the items, except the ones in the first dimension so its codes were defined according to the order of the answer options. Then the data base was configured by defining the variables and adding the codes. Statistical tests were run then to obtain the necessary values to evaluate internal consistency.

Dimension 3.1 "Teachers' perceived self-efficacy to teach multiple document comprehension" was analyzed. First, a case processing summary was retrieved. Out of the 293 cases, 36 were excluded given that software only allows for complete cases. A total of 257 cases were analyzed for this dimension.

Table 18.
Case Processing Summary of sub dimension 3.1

		N	%
Cases	Valid	257	87.7
	Excluded[a]	36	12.3
	Total	293	100.0

a. Listwise deletion based on all variables
in the procedure.

Then, the reliability test was conducted on the items of this sub dimension. The analysis showed that the 15 items of the dimension (items 9 to 23) have a reliability of 0.959. This value shows that the variables have a very desirable reliability.

Table 19.
Reliability Statistics of sub dimension 3.1

Cronbach's Alpha	N of Items
.959	15

Finally, an item-total statistics chart was retrieved (table 20). This chart includes mean, variance and Cronbach's alpha values if a specific item is deleted, as well as corrected item-total correlation values. These values are presented in order to assist decision-making in terms of keeping or deleting items. Deleting certain item could raise or decrease the alpha value of the sub dimension, thus its internal consistency. Variations in Cronbach's alpha in sub dimension 3.1 are between 0.955 and 0.96 which are very close to the alpha of 0.959 that the sub dimension already has. The results do not show the need to delete any item in this sub dimension.

Table. 20
Item-Total Statistics of sub dimension 3.1

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
9. Buscar diversas fuentes en línea pertinentes para mis actividades docentes	49.01	120.160	.614	.960
10. Buscar diversas fuentes físicas pertinentes para mis actividades docentes	48.91	121.469	.636	.959
11. Identificar diversas estrategias de lectura comparativa de varias fuentes	49.10	117.518	.777	.956
12. Identificar diversas estrategias para evaluar la confiabilidad de varios tipos de fuentes	49.23	116.750	.805	.956
13. Identificar diversas estrategias para evaluar la confiabilidad del contenido de varios tipos de fuentes	49.25	116.381	.802	.956
14. Diseñar secuencias didácticas que involucren la lectura comparativa de varias fuentes	49.19	118.642	.730	.957
15. Utilizar diferentes métodos didácticos para enseñar estrategias de lectura comparativa	49.14	118.358	.790	.956
16. Implementar secuencias didácticas que involucren la lectura comparativa de varias fuentes	49.15	118.215	.789	.956

17. Diseñar instrumentos para evaluar la comprensión de lectura comparativa de varias fuentes	49.33	117.302	.759	.957
18. Implementar instrumentos para evaluar la comprensión de lectura comparativa de varias fuentes	49.25	118.233	.766	.956
19. Enseñar estrategias de búsqueda en internet para la lectura comparativa de fuentes	49.25	117.287	.778	.956
20. Enseñar estrategias de búsqueda en acervos físicos para la lectura comparativa de fuentes	49.38	117.236	.753	.957
21. Enseñar estrategias para la lectura comparativa de varias fuentes	49.26	116.414	.834	.955
22. Enseñar estrategias para evaluar la confiabilidad de varios tipos de fuentes	49.35	116.111	.826	.955
23. Enseñar estrategias para evaluar la confiabilidad del contenido de varios tipos de fuentes	49.32	116.055	.816	.955

The second sub dimension "Frequency of multiple document comprehension activities" is represented by items 24 to 31. 14 out the 293 cases were excluded as shown in the table below.

Table 21.
Case Processing Summary of sub dimension 3.2

	N	%

Cases	Valid	279	95.2
	Excluded[a]	14	4.8
	Total	293	100.0

a. Listwise deletion based on all variables in the procedure.

As illustrated in Table 22, a Cronbach's alpha value of 0.93 was obtained from the data collected. This means that the results of this dimension are highly reliable, indicating that a repeated administration of the instrument to the same subject would give similar and consistent results.

Table 22.
Reliability Statistics of sub dimension 3.2

Cronbach's Alpha	N of Items
.930	8

An item-total statistics table was retrieved for sub dimension 3.2. The highest alpha value in the table (0.924) was obtained when deleting item 24, which would represent a decrease on the reliability of the sub dimension considering its alpha value of 0.93. Therefore, no changes were suggested for this portion of the scale.

Table 23.
Item-Total Statistics of sub dimension 3.2

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
24. Actividades en el aula en las cuales los alumnos buscan varias fuentes con fines comparativos	23.00	30.428	.719	.924
25. Tareas en las cuales los alumnos buscan varias fuentes con fines comparativos	22.92	30.062	.765	.920

26. Actividades en el aula en las cuales los alumnos lean varias fuentes de manera comparativa	23.04	29.963	.751	.921
27. Tareas en las cuales los alumnos lean varias fuentes de manera comparativa	23.03	29.618	.784	.919
28. Actividades en las cuales los alumnos evalúen la confiabilidad de varias fuentes	23.37	29.953	.728	.923
29. Tareas en las cuales los alumnos evalúen la confiabilidad de varias fuentes	23.42	29.524	.754	.921
30. Actividades en las cuales los alumnos contrasten sus propias ideas sobre un tema con aquellas encontradas en varias fuentes	22.99	29.806	.774	.920
31. Tareas en las cuales los alumnos contrasten sus propias ideas sobre un tema con aquellas encontradas en varias fuentes	23.03	29.395	.790	.918

The reliability test for the sub dimension "Planning of multiple document comprehension activities", which covers from item 32 to item 51, was run. 36 cases were excluded out of the 293, as shown below.

Table 24.
Case Processing Summary of sub dimension 3.3

		N	%
Cases	Valid	257	87.7

86

Excluded[a]	36	12.3
Total	293	100.0

a. Listwise deletion based on all variables
in the procedure.

The analysis done to the third sub dimension produced as result an alpha value of 0.934 (table 25). It means that the third sub dimension is reliable.

Table 25.
Reliability Statistics of sub dimension 3.3

Cronbach's Alpha	N of Items
.934	20

The item-total statistics of sub dimension 3.3 (table 26) showed Cronbach's alpha values between 0.929 and 0.93. No modifications were suggested given that alpha values were slightly different to the original value of this sub dimension.

Table 26.
Item-Total Statistics of sub dimension 3.3

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
32. Busco fuentes adicionales a las proporcionadas por la SEP	71.16	141.119	.598	.931
33. Busco fuentes multimodales (texto, fotos/dibujos, videos)	71.16	141.471	.624	.930
34. Busco fuentes en sitios web gubernamentales	71.95	139.256	.616	.931
35. Evalúo la confiabilidad de las fuentes	71.55	139.272	.657	.930

36. Identifico diferencias y semejanzas entre la información de distintas fuentes	71.41	139.524	.725	.929
37. Selecciono fuentes que contienen información complementaria (un texto añade a lo que dice el otro)	71.47	139.914	.695	.929
38. Selecciono fuentes que contienen la misma información	71.81	143.001	.516	.933
39. Selecciono fuentes que contienen información discrepante	72.00	142.668	.500	.933
40. Selecciono sólo fuentes confiables	71.21	141.461	.703	.929
41. Evalúo la confiabilidad de las fuentes con base en el medio de publicación	71.49	138.962	.723	.929
42. Evalúo la confiabilidad de las fuentes con base en la reputación de los autores	71.69	140.440	.605	.931
43. Evalúo la confiabilidad de las fuentes con base en su uso del lenguaje	71.51	139.774	.653	.930
44. Selecciono fuentes en internet que son de fácil acceso para mis alumnos	71.28	141.970	.600	.931
45. Selecciono fuentes que traten temas motivantes para mis alumnos	71.04	142.237	.688	.930

46. Selecciono fuentes con contenido complementario al de los libros de texto	71.12	142.669	.632	.930
47. Selecciono fuentes que traten el mismo contenido que el libro de texto	71.48	143.212	.499	.933
48. Selecciono fuentes con un diseño visual atractivo para mis alumnos	71.16	140.856	.674	.930
49. Identifico posibles puntos difíciles de comprender en varias fuentes	71.43	140.683	.659	.930
50. Identifico posibles puntos difíciles de vincular entre varias fuentes	71.63	141.203	.629	.930
51. Consulto ficheros (guías de actividades)	71.81	143.053	.504	.933

Reliability analysis was done for the three sub dimension altogether. There were 62 cases excluded out of the total of 293 cases (table 27), and a Cronbach's alpha value of 0.967 was obtained as shown below (table 28). Consequently, it is concluded that the results of the third dimension are highly reliable.

Table 27.
Case Processing Summary of dimension 3

		N	%
Cases	Valid	231	78.8
	Excluded[a]	62	21.2
	Total	293	100.0

a. Listwise deletion based on all variables in the procedure.

Table 28.

Reliability Statistics of dimension 3

Cronbach's Alpha	N of Items
.967	43

Table 29 was retrieved along with the case processing summary and the reliability statistics of the third dimension. The values of the table showed that there is no need to delete items in the dimension. The alpha varied from 0.965 to 0.967 when an item was deleted. This does not represent an impactful change in the alpha obtained when all items of the dimension were considered.

Table 29.

Item-Total Statistics of dimension 3

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
9. Buscar diversas fuentes en línea pertinentes para mis actividades docentes	151.76	655.150	.575	.966
10. Buscar diversas fuentes físicas pertinentes para mis actividades docentes	151.68	657.985	.579	.966
11. Identificar diversas estrategias de lectura comparativa de varias fuentes	151.87	648.951	.720	.966
12. Identificar diversas estrategias para evaluar la confiabilidad de varios tipos de fuentes	152.01	648.217	.704	.966

13. Identificar diversas estrategias para evaluar la confiabilidad del contenido de varios tipos de fuentes	152.00	646.600	.731	.965
14. Diseñar secuencias didácticas que involucren la lectura comparativa de varias fuentes	151.99	653.304	.619	.966
15. Utilizar diferentes métodos didácticos para enseñar estrategias de lectura comparativa	151.95	650.054	.714	.966
16. Implementar secuencias didácticas que involucren la lectura comparativa de varias fuentes	151.94	651.200	.690	.966
17. Diseñar instrumentos para evaluar la comprensión de lectura comparativa de varias fuentes	152.11	648.245	.693	.966
18. Implementar instrumentos para evaluar la comprensión de lectura comparativa de varias fuentes	152.01	650.556	.697	.966
19. Enseñar estrategias de búsqueda en internet para la lectura comparativa de fuentes	152.01	648.204	.701	.966
20. Enseñar estrategias de búsqueda en acervos físicos para la lectura comparativa de fuentes	152.13	647.684	.716	.966

21. Enseñar estrategias para la lectura comparativa de varias fuentes	152.05	646.567	.772	.965
22. Enseñar estrategias para evaluar la confiabilidad de varios tipos de fuentes	152.11	645.544	.748	.965
23. Enseñar estrategias para evaluar la confiabilidad del contenido de varios tipos de fuentes	152.11	645.062	.741	.965
24. Actividades en el aula en las cuales los alumnos buscan varias fuentes con fines comparativos	152.10	651.921	.681	.966
25. Tareas en las cuales los alumnos buscan varias fuentes con fines comparativos	152.00	653.030	.681	.966
26. Actividades en el aula en las cuales los alumnos lean varias fuentes de manera comparativa	152.11	652.622	.639	.966
27. Tareas en las cuales los alumnos lean varias fuentes de manera comparativa	152.10	652.173	.654	.966
28. Actividades en las cuales los alumnos evalúen la confiabilidad de varias fuentes	152.45	655.657	.563	.966
29. Tareas en las cuales los alumnos evalúen la confiabilidad de varias fuentes	152.50	650.799	.632	.966

30. Actividades en las cuales los alumnos contrasten sus propias ideas sobre un tema con aquellas encontradas en varias fuentes	152.05	651.219	.687	.966
31. Tareas en las cuales los alumnos contrasten sus propias ideas sobre un tema con aquellas encontradas en varias fuentes	152.12	649.246	.687	.966
32. Busco fuentes adicionales a las proporcionadas por la SEP	151.41	659.051	.523	.966
33. Busco fuentes multimodales (texto, fotos/dibujos, videos)	151.44	659.438	.529	.966
34. Busco fuentes en sitios web gubernamentales	152.23	652.940	.568	.966
35. Evalúo la confiabilidad de las fuentes	151.84	650.205	.667	.966
36. Identifico diferencias y semejanzas entre la información de distintas fuentes	151.68	651.617	.714	.966
37. Selecciono fuentes que contienen información complementaria (un texto añade a lo que dice el otro)	151.74	655.741	.620	.966
38. Selecciono fuentes que contienen la misma información	152.05	661.797	.452	.967

39. Selecciono fuentes que contienen información discrepante	152.28	658.027	.492	.967
40. Selecciono solo fuentes confiables	151.49	658.329	.618	.966
41. Evalúo la confiabilidad de las fuentes con base en el medio de publicación	151.76	654.539	.618	.966
42. Evalúo la confiabilidad de las fuentes con base en la reputación de los autores	152.01	655.478	.539	.966
43. Evalúo la confiabilidad de las fuentes con base en su uso del lenguaje	151.79	656.690	.533	.966
44. Selecciono fuentes en internet que son de fácil acceso para mis alumnos	151.55	659.544	.529	.966
45. Selecciono fuentes que traten temas motivantes para mis alumnos	151.32	659.965	.598	.966
46. Selecciono fuentes con contenido complementario al de los libros de texto	151.39	661.388	.562	.966
47. Selecciono fuentes que traten el mismo contenido que el libro de texto	151.75	664.691	.380	.967
48. Selecciono fuentes con un diseño visual atractivo para mis alumnos	151.45	657.657	.585	.966

49. Identifico posibles puntos difíciles de comprender en varias fuentes	151.69	655.127	.614	.966
50. Identifico posibles puntos difíciles de vincular entre varias fuentes	151.90	655.577	.598	.966
51. Consulto ficheros (guías de actividades)	152.10	657.507	.510	.966

The reliability test could only be applied to the three sub dimensions of the third dimension. The values obtained for these sub dimensions were between 0.93 and 0.96; values considered positive. Previously, García (2006) explained that in individual-level decisions, values of 0.95 denote a reliable scale (as cited by Vega, Perales-Escudero y Correa, 2019). Therefore, the values obtained for the internal consistency of the scale render it reliable.

4.2. Factor Analysis

Factor analysis is a technique used to reduce a larger number of variables into fewer numbers of factors. This type of analysis allows to determine the extent to which shared variance (the intercorrelation between measures) exists between variables or items. It is a way to determine to what degree individual items measure something in common, such as a factor.

Following, we present the statistical tests done to the three sub dimensions from the dimension: Multiple Document comprehension teaching and evaluation practices. The sub dimensions are: teachers' perceived self-efficacy to teach MDC, frequency of MDC activities, and planning of MDC activities. We run a factor analysis test. Three rotation techniques (Varimax, Quartimax and Oblimix) were used. Not all the items loaded on their specific factors, only one of the three dimensions was confirmed: 15 out of 43 Teachers' perceived self-efficacy to teach multiple document comprehension loaded on their corresponding factor with Varimax rotation. Only two of the items got a factorial load higher than .521 and the rest of the items

obtained factorial loads greater than .640. See table 30. Items that loaded in their corresponding factor are in grey. Items that do not belong to the factor are in red.

Table 30.

Factor analysis results. Rotated Component Matrix

Teachers' perceived self-efficacy to teach MDC	Component		
	1	2	3
9. Buscar diversas fuentes en línea pertinentes para mis actividades docentes	.573	.150	-.507
10. Buscar diversas fuentes físicas pertinentes para mis actividades docentes	.521	.048	-.398
11. Identificar diversas estrategias de lectura comparativa de varias fuentes	.710	-.116	-.297
12. Identificar diversas estrategias para evaluar la confiabilidad de varios tipos de fuentes	.735	-.227	-.317
13. Identificar diversas estrategias para evaluar la confiabilidad del contenido de varios tipos de fuentes	.762	-.184	-.293
14. Diseñar secuencias didácticas que involucren la lectura comparativa de varias fuentes	.642	-.403	-.121
15. Utilizar diferentes métodos didácticos para enseñar estrategias de lectura comparativa	.698	-.305	-.166
16. Implementar secuencias didácticas que involucren la lectura comparativa de varias fuentes	.677	-.311	-.149
17. Diseñar instrumentos para evaluar la comprensión de lectura comparativa de varias fuentes	.741	-.368	-.122
18. Implementar instrumentos para evaluar la comprensión de lectura comparativa de varias fuentes	.695	-.352	-.086
19. Enseñar estrategias de búsqueda en internet para la lectura comparativa de fuentes	.738	-.273	-.170
20. Enseñar estrategias de búsqueda en acervos físicos para la lectura comparativa de fuentes	.741	-.156	-.185
21. Enseñar estrategias para la lectura comparativa de varias fuentes	.767	-.265	-.124
22. Enseñar estrategias para evaluar la confiabilidad de varios tipos de fuentes	.795	-.323	-.131
23. Enseñar estrategias para evaluar la confiabilidad del contenido de varios tipos de fuentes	.805	-.309	-.152
24. Actividades en el aula en las cuales los alumnos buscan varias fuentes con fines comparativos	.640	-.062	.169

The results from the Cronbach's alpha, the comments from the judges and the results from the factor analysis were used as a criterion to remove, retain or modify the items that did not load in their corresponding factor. Then, they were integrated into a large version of the instrument. As we mentioned before, this study developed only a part of the whole scale. The final version of the scale comprised this and other sections. The last version of the scale comprised 71 items. Regarding the sub dimension: planning of MDC activities, the items did load into four factors and most of the items got factorial loads than run from .599 up to .794, six items got factorial loads lower than .599 and down to .380 (Vega, Perales-Escudero, Correa, Murrieta & Reyes, in press). The sub dimension about frequency is being restructured for further piloting and for further details about the reliability of the complete scale.

CHAPTER V. CONCLUSIONS

Literacy is a constant topic in today's pursuit to educate competent students in all levels of education. Literacy is meaning-making process, it is mostly required in secondary and post-secondary school (Colombi & Schleppegrel, 2002). Due to the extensive number of texts and information that students are required to read in secondary and post-secondary contexts, multiple documents literacy has been added to the catalogue of competencies students are to develop. Bråten and Strømsø (2010) establish that "multiple-documents literacy concerns the ability to locate, evaluate, and use diverse sources of information for the purpose of constructing and communicating an integrated, meaningful representation of a particular issue, subject, or situation" (p.635).

Understanding multiple texts is a diverse and complex task. Thus, it is unreasonable to point out that the task of teaching this activity is not only complex and arduous. Teachers thus need specialized knowledge and training. Nevertheless, very few is known about this topic in Mexico; there is a paucity of research studies on multiple documents reading comprehension. No scale was found that measured teachers' knowledge, training and practice on this topic. For this reason, a group of researchers decided to start the design and validate a scale to measure multiple document comprehension among secondary teachers from the state of Quintana Roo.

The objective of this study was then to design and validate a scale to characterize multiple document comprehension teaching and evaluation practices in bilingual middle schools. The purpose of the scale designed was to analyze the relation between the contextual factors and multiple document comprehension. This research study was part of a broader research project called *Prácticas de enseñanza y evaluación de la comprensión lectora de múltiples fuentes en educación secundaria: un estudio mixto*. This study covered only a portion of the scale developed by its parent project, as was stated in the introduction above.

In order to know about teachers' practices, it was decided to develop a reliable scale to characterize their teaching and evaluation practices surrounding multiple document comprehension. This scale would become a first examination of the topic, and later it could be modified to explore multiple document comprehension in other contexts, opening a path to further research.

The scale design followed the methodology by Santaolària and Doval (2003). The process started by establishing the objective of the scale and from it, drawing the attribute to be measured along with the target population of the scale. Considering those aspects, the items of the scale could be devised. The authors established four sources that the items could derive from: a scale previously designed, the knowledge of experts in the topic, literature, or the opinion of the target population. The first option, a scale previously designed, was discarded because no scale was found to characterize teachers' practices regarding multiple document comprehension. Thus, the items would have to be devised from the other three options. An interview was then designed to gather the opinions of the target population. The interview design involved the knowledge of experts and the literature consulted about multiple document comprehension. The interview was applied to a sample and the data collected, along with the knowledge of experts and the literature, was used to devise the items. The process of devising items was based on operational definitions that derived from a group of models and theories that explain multiple document comprehension, such as the Documents Model Theory, MD-TRACE Model, the Domain Model, the Student model and the Sociocognitive Interactive Model. Items were devised taking into account the appropriate wording; assigning rating scales and coding were also part of the process of designing the scale. Once the instrument was finished, items were selected in two ways: theoretically and empirically. The former consist of a relevance and content validity evaluation made by experts that were not involved in the process of designing the scale. The latter is an analysis of the psycometrical characteristics of the scale based on the data gathered from piloting the instrument with a sample. The purpose of said analysis is measuring the reliability of the instrument. The results from the selection of items results in modifications to the scale, in case it is necessary.

The instrument was organized by dimensions. Each dimension provided different information regarding teachers' multiple document comprehension practices. Dimension I provided data about the teachers' demographics of age and gender. It provided information on the subjects teachers teach, the type of school the work at, and their years of teaching experience among others. The second dimension provided information about teachers' training regarding multiple document comprehension. Meanwhile, the third dimension gave insight on the teachers' teaching practices in regards of three aspects, their perceived self-efficacy to teach multiple document comprehension, the frequency of multiple document comprehension activities, and the

planning to teach multiple document comprehension. The fourth dimension supplied data about the type of evaluation teachers use to evaluate multiple document comprehension.

There are various contributions derived from this thesis. First, the scale was validated in terms of reliability. Thus, it can be used to characterize middle school teachers' teaching and evaluation practices of multiple document comprehension, including bilingual middle school teachers' practices. Characterizing these practices leads to implement actions to train teachers about multiple document comprehension. It also serves to provide suggestions to improve teachers' multiple document comprehension practices in class. As mentioned before, the scale opens up a path for other types of research. The interview guide that was developed could be used to carry out qualitative research. The scale could also be modified to be applied to teachers in other levels of education. The scale could be used to explore teachers' practices in a specific subject of study. Another important contribution is that this thesis can be a starting point of reference for similar research topics, whether it is about designing and validating scales or about multiple document comprehension.

There were some limitations in this research. Time was limited to develop each of the phases of the methodology; therefore, some phases were done simultaneously or in a rush. Also, there were not many researchers that were knowledgeable on the topic of study. The most noticeable limitation was in terms of the conditions to administer the instrument. There was some resistance from school principals and teachers. They have many activities and limited time, so it was complicated for them to agree to answer the instrument. Permissions to access schools and the process involved in it were also limiting to the research. Moreover, as it was explained in the correspondent section of the thesis, due the impossibility of gathering the amount of bilingual middle school teachers to validate the scale, it was necessary to consider teachers from all modalities of middle school. Still, the scale is valid to be applied to bilingual middle school teachers as they were part of the sample.

In order to improve the scale developed in this thesis, I consider that there could be some aspect to consider. First, the format of the instrument can be improved to make it more attractive and easy to answer. In addition, developing a digital version of the scale could be convenient since a broader range of respondents could be reached and the data could be gathered easily. Besides, a digital instrument is more appealing and the costs of the process could be reduced. Lastly, I think

it is necessary to apply measures to reduce the levels of rejection to apply the instrument, such as an information session before the administration to raise awareness about the importance of multiple document comprehension.

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APPENDIX 1

First version of the scale

A continuación, se presentan una serie de aspectos, seleccione la opción y marque con una "X" según corresponda.

I.   DATOS GENERALES

1. TIPO DE ESCUELA SECUNDARIA DONDE LABORA

	GENERAL PÚBLICA
	TÉCNICA PÚBLICA
	PRIVADA
	TELESECUNDARIA
	ÍNDIGENA

2. GÉNERO

1. MASCULINO		2. FEMENINO	

3. EDAD

_____

4. GRADO MÁXIMO DE ESTUDIOS

LICENCIATURA	
MAESTRÍA	
DOCTORADO	
ESPECIALIDAD	

5. **AÑOS DE EXPERIENCIA DOCENTE** (FRENTE A GRUPO)

_____

6. ASIGNATURA(S) QUE IMPARTE

ESPAÑOL	
HISTORIA	
BIOLOGÍA	
QUÍMICA	
FÍSICA	
FORMACIÓN CÍVICA Y ÉTICA	

7. GRADOS QUE IMPARTE

1 °	
2 °	
3 °	

8. INDIQUE LA CANTIDAD DE ALUMNOS QUE ATIENDE APROXIMADAMENTE EN SECUNDARIA

9. DURANTE LOS ÚTLIMOS CINCO AÑOS HA RECIBIDO FORMACIÓN PARA LA ENSEÑANZA DE LA COMPRENSIÓN DE LECTURA COMPARATIVA DE VARIAS FUENTES

SÍ	
NO	

10. EN CASO AFIRMATIVO DE LA PREGUNTA 9 INDIQUE EL TIPO DE FORMACIÓN RECIBIDA

CURSOS	
TALLERES	
DIPLOMADOS	
ESTUDIOS DE POSGRADO	
A TRAVÉS DE LOS CONSEJOS TÉCNICOS ESCOLARES	

II.   FORMACIÓN PARA LA ENSEÑANZA DE LA LECTURA DE COMPRENSIÓN DE MÚLTIPLES FUENTES

Instrucciones: A continuación, se presentan una serie de afirmaciones con respecto a la formación recibida para la enseñanza de la comprensión de lectura comparativa de múltiples fuentes, marque con una "X" según corresponda con su nivel de acuerdo.

1. Mis estudios de grado (licenciatura, maestría, doctorado) me prepararon para conocer estrategias de lectura comparativa de varias fuentes.
2. Los cursos de capacitación que he recibido me han preparado para conocer estrategias de lectura comparativa de varias fuentes.
3. Mis estudios de grado (licenciatura, maestría, doctorado) me prepararon para utilizar métodos didácticos (ej. ap. colaborativo) para enseñar la lectura comparativa de varias fuentes.

4. Los cursos de capacitación que he recibido me han preparado para utilizar métodos didácticos (ej. ap. colaborativo) para enseñar la lectura comparativa de varias fuentes.
5. Mis estudios de grado (licenciatura, maestría, doctorado) me prepararon para conocer estrategias de evaluación de la confiabilidad de varias fuentes.
6. Mis estudios de grado (licenciatura, maestría, doctorado) me prepararon para utilizar métodos didácticos (ej. ap. colaborativo) para enseñar estrategias de evaluación de la confiabilidad de varias fuentes.
7. Los cursos de capacitación que he recibido me han preparado para conocer estrategias de evaluación de la confiabilidad de varias fuentes.
8. Los cursos de capacitación me prepararon para utilizar métodos didácticos (ej. ap. colaborativo) para enseñar estrategias de evaluación de la confiabilidad de varias fuentes.
9. Mi formación para enseñar estrategias de lectura comparativa de varias fuentes ha sido autodidacta.
10. Mi formación para enseñar estrategias de evaluación de la lectura comparativa de varias fuentes ha sido autodidacta.
11. Mi formación para enseñar estrategias de lectura comparativa de varias fuentes la he adquirido informalmente de otros compañeros.
12. Mi formación para enseñar estrategias de evaluación de la confiabilidad de varias fuentes la he adquirido informalmente de otros compañeros.
13. Necesito más capacitación para enseñar estrategias de lectura comparativa de varias fuentes.
14. Necesito más capacitación para enseñar estrategias de evaluación de la confiabilidad de varias fuentes.
15. Necesito más capacitación para utilizar métodos didácticos para la enseñanza de la lectura comparativa de varias fuentes.
16. Necesito más capacitación para diseñar instrumentos de evaluación que me permitan evaluar la comprensión de lectura comparativa de varias fuentes.
17. Necesito más capacitación para diseñar instrumentos de evaluación que me permitan evaluar cómo los alumnos evalúan la confiabilidad de las fuentes.

PERCEPCIONES DE LAS PRÁCTICAS DE ENSEÑANZA DE LA COMPRENSIÓN DE MÚLTIPLES FUENTES

Instrucciones: A continuación, se presentan una serie de afirmaciones con respecto a la enseñanza de la comprensión lectora de múltiples fuentes, marque con una "X" según corresponda con su nivel de acuerdo.

III.   PRÁCTICAS DE ENSEÑANZA

3.1 AUTOEFICACIA
Indique que tan capaz se siente de realizar las siguientes actividades de lectura comparativa de varias fuentes
1. Buscar diversas fuentes en línea pertinentes para mis actividades docentes. B
2. Buscar diversas fuentes físicas pertinentes para mis actividades docentes. B
3. Identificar diversas estrategias de lectura comparativa de varias fuentes. V

4. Identificar diversas estrategias para evaluar la confiabilidad de varios tipos de fuentes. EF
5. Identificar diversas estrategias para evaluar la confiabilidad del contenido de varios tipos de fuentes. EC
6. Diseñar secuencias didácticas que involucran la lectura comparativa de varias fuentes. G
7. Utilizar diferentes métodos didácticos para enseñar estrategias de lectura comparativa. G
8. Implementar secuencias didácticas que involucran la lectura comparativa de varias fuentes. G
9. Diseñar instrumentos para evaluar la comprensión de lectura comparativa de varias fuentes. G
10. Implementar instrumentos para evaluar la comprensión de lectura comparativa de varias fuentes. G
11. Enseñar estrategias de búsqueda en internet para la lectura comparativa de fuentes. B
12. Enseñar estrategias de búsqueda en acervos físicos para la lectura comparativa de fuentes. B
13. Enseñar estrategias para la lectura comparativa de varias fuentes. V
14. Enseñar estrategias para evaluar la confiabilidad de varios tipos de fuentes. EF
15. Enseñar estrategias para evaluar la confiabilidad del contenido de varios tipos de fuentes. EC

3.2 FRECUENCIA
Indique con qué frecuencia sus clases incluyen

1. Actividades en el aula en las cuales los alumnos busquen varias fuentes con fines comparativos.
2. Tareas en las cuales los alumnos busquen varias fuentes con fines comparativos.
3. Actividades en el aula en las cuales los alumnos lean varias fuentes de manera comparativa.
4. Tareas en las cuales los alumnos lean varias fuentes de manera comparativa.
5. Actividades en las cuales los alumnos evalúen la confiabilidad de varias fuentes
6. Tareas en las cuales los alumnos evalúen la confiabilidad de varias fuentes
7. Actividades en las cuales los alumnos contrasten sus propias ideas sobre un tema con aquellas encontradas en varias fuentes.
8. Tareas en las cuales los alumnos contrasten sus propias ideas sobre un tema con aquellas encontradas en varias fuentes

3.3 PREPARACIÓN

Indique la frecuencia con la cual realiza las siguientes actividades como preparación para sus clases que involucran trabajo con varias fuentes
1. Busco materiales adicionales a los proporcionados por la Secretaría. B
2. Busco materiales multimodales (texto, fotos/dibujos, videos). B

3. Busco fuentes de páginas gubernamentales. B
4. Evalúo la confiabilidad de las fuentes a usar. EF
5. Identifico diferencias y semejanzas entre la información de distintas fuentes. V
6. Selecciono fuentes que contienen información complementaria (un texto añade a lo que dice el otro). V
7. Selecciono fuentes que contienen la misma información. V
8. Selecciono fuentes que contienen información discrepante. V
9. Selecciono soólo fuentes confiables. EF
10. Evalúo la confiabilidad de las fuentes con base en el medio de publicación. EF
11. Evalúo la confiabilidad de las fuentes con base en la reputación de los autores. EF
12. Evalúo la confiabilidad de las fuentes con base en su uso del lenguaje. EF
13. Selecciono fuentes que son de fácil acceso para mis alumnos en. EF
14. Selecciono fuentes que traten temas motivantes para mis alumnos. EC
15. Selecciono fuentes con contenido complementario al de los libros de texto. EC
16. Selecciono fuentes que traten el mismo contenido que el libro de texto. EC
17. Selecciono fuentes con un diseño visual atractivo para mis alumnos. EC
18. Identifico posibles puntos difíciles de comprender en varias fuentes. EC
19. Identifico posibles puntos difíciles de vincular entre varias fuentes. V

4. EVALUACIÓN

1. Realizo una evaluación diagnóstica al inicio de cada proyecto para saber que habilidades poseen
2. Realizo una evaluación diagnóstica al inicio de cada proyecto para saber que conocen acerca del contenido del tema
3. Durante el desarrollo de la actividad evalúo si el alumno comprende en qué consiste el proyecto a desarrollar
4. Durante el desarrollo de la actividad evalúo si el alumno comprende el tema
5. Durante el desarrollo de la actividad evalúo si el alumno aprende una determinada habilidad o estrategia la cual se pretende desarrolle a través del proyecto
6. Al finalizar el proyecto evalúo el aprendizaje del contenido del tema abordado en el proyecto
7. Al finalizar el proyecto evalúo el aprendizaje del contenido del tema abordado en el proyecto
8. Al finalizar el proyecto evalúo el aprendizaje de la habilidad o estrategia abordada en el proyecto (por ejemplo, el uso de organizadores gráficos)
9. Al finalizar el proyecto evalúo el aprendizaje de aspectos lingüísticos como: uso de conectores, uso correcto de comillas para citar, formato de citas parentéticas, inclusión de referencias
10. Al finalizar el proyecto evalúo la ortografía, sintaxis.
11. Al finalizar el proyecto evalúo la fiabilidad de las fuentes que utilizó el alumno para la elaboración de su proyecto

APPENDIX 2

Second version of the scale (Vega, Perales-Escudero y Correa, 2018).

<div style="border: 2px solid blue; padding: 10px;">

PRÁCTICAS DE ENSEÑANZA Y EVALUACIÓN DE LA COMPRENSIÓN DE MÚLTIPLES FUENTES EN EDUCACIÓN SECUNDARIA

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DESCRIPCIÓN: Los objetivos del presente cuestionario son conocer sus percepciones acerca de las prácticas de enseñanza y evaluación de la comprensión de múltiples fuentes y analizar variables de carácter contextual que influyen en dichas prácticas.

CONFIDENCIALIDAD: La información que provea a través del presente cuestionario se utilizará únicamente para fines de investigación. En ningún momento será utilizado su nombre ni el nombre de la institución donde usted labora.

GRACIAS POR SU COLABORACIÓN

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I.DATOS GENERALES

INSTRUCCCIONES:
A continuación, se presentan una serie de aspectos, seleccione la opción y marque con una "X" según corresponda.

1.   TIPO DE ESCUELA SECUNDARIA DONDE LABORA
GENERAL PÚBLICA__ TÉCNICA PÚBLICA__   PRIVADA__ TELESECUNDARIA__
INDÍGENA__

2.   GÉNERO
MASCULINO__   FEMENINO__

3.   EDAD
      _____

4.   GRADO MÁXIMO DE ESTUDIOS
LICENCIATURA__   MAESTRÍA__   DOCTORADO__   ESPECIALIDAD__

5.   AÑOS DE EXPERIENCIA DOCENTE (FRENTE A GRUPO)
_____

6.   ASIGNATURA(S) QUE IMPARTE
ESPAÑOL__   HISTORIA__ BIOLOGÍA__ QUÍMICA__ FÍSICA__   FORMACIÓN CÍVICA Y ÉTICA___

OTRA_____

7.   ENCIERRE EL O LOS GRADO(S) EN LOS QUE IMPARTE CLASE
1°   2°   3°

8.   INDIQUE LA CANTIDAD PROMEDIO DE ALUMNOS QUE ATIENDE POR GRUPO

MENOS DE 20	**20-30**	31-40	41-50	51-60	MÁS DE 60
_____	**_____**	_____	_____	_____	_____

9.   ENCIERRE EL NÚMERO DE GRUPOS QUE ATIENDE POR CICLO ESCOLAR
1 2 3 4 5 6 7 8 9 10 MÁS DE 10

10.   DURANTE LOS ÚLTIMOS CINCO AÑOS, ¿HA RECIBIDO FORMACIÓN PARA LA ENSEÑANZA DE LA COMPRENSIÓN DE LECTURA COMPARATIVA DE VARIAS FUENTES?
SÍ__ NO__
En caso negativo pase a la siguiente sección

11.   INDIQUE EL TIPO DE FORMACIÓN RECIBIDA

CURSOS__ TALLERES__ DIPLOMADOS__ ESTUDIOS DE POSGRADO__

II.FORMACIÓN PARA LA ENSEÑANZA DE LA LECTURA DE COMPRENSIÓN DE MÚLTIPLES FUENTES

Instrucciones: marque con una "X" según corresponda.

Indique donde obtuvo la preparación sobre los siguientes aspectos de la lectura comparativa de múltiples fuentes

1=No tengo esa preparación 2=Licenciatura 3=Maestría 4=Doctorado 5=Autodidacta 6=De manera informal con los compañeros						
1. Conocimiento de estrategias de lectura comparativa de varias fuentes.	1	2	3	4	5	6
2. Utilizar diferentes estrategias de búsqueda en internet para encontrar información académica pertinente.	1	2	3	4	5	6
3. Utilizar diferentes estrategias para evaluar la confiabilidad de las fuentes (ejemplo reputación del autor, sitio de publicación) de las fuentes.	1	2	3	4	5	6
4. Utilizar métodos didácticos (ejemplo aprendizaje colaborativo) para enseñar la lectura comparativa de varias fuentes.	1	2	3	4	5	6
1=No tengo esa preparación 2=Licenciatura 3=Maestría 4=Doctorado 5=Autodidacta						
5. Enseñar estrategias de búsqueda de información.	1	2	3	4	5	6
6. Enseñar estrategias de evaluación de la confiabilidad de la información de varias fuentes.	1	2	3	4	5	6
7. Diseñar instrumentos para evaluar la comprensión de lectura comparativa de varias fuentes.	1	2	3	4	5	6
8. Diseñar instrumentos para valorar cómo los alumnos evalúan la confiabilidad (ejemplo reputación del autor, sitio de publicación) de las fuentes.	1	2	3	4	5	6

III.PRÁCTICAS DE ENSEÑANZA

Instrucciones: marque con una "X" según corresponda.

3.1 AUTOEFICACIA

Indique que tan capaz se siente de realizar las siguientes actividades de lectura comparativa de varias fuentes

1=No capaz 2=Poco capaz 3=Medianamente capaz 4=Bastante capaz 5=Sumamente capaz					
9. Buscar diversas fuentes en línea pertinentes para mis actividades docentes.	1	2	3	4	5
10. Buscar diversas fuentes físicas pertinentes para mis actividades docentes.	1	2	3	4	5
11. Identificar diversas estrategias de lectura comparativa de varias fuentes.	1	2	3	4	5
12. Identificar diversas estrategias para evaluar la confiabilidad de varios tipos de fuentes.	1	2	3	4	5
13. Identificar diversas estrategias para evaluar la confiabilidad del contenido de varios tipos de fuentes.	1	2	3	4	5
14. Diseñar secuencias didácticas que involucren la lectura comparativa de varias fuentes.	1	2	3	4	5
15. Utilizar diferentes métodos didácticos para enseñar estrategias de lectura comparativa.	1	2	3	4	5
16. Implementar secuencias didácticas que involucren la lectura comparativa de varias fuentes.	1	2	3	4	5
17. Diseñar instrumentos para evaluar la comprensión de lectura comparativa de varias fuentes.	1	2	3	4	5
18. Implementar instrumentos para evaluar la comprensión de lectura comparativa de varias fuentes.	1	2	3	4	5
19. Enseñar estrategias de búsqueda en internet para la lectura comparativa de fuentes.	1	2	3	4	5
1=No capaz 2=Poco capaz 3=Medianamente capaz 4=Bastante capaz 5=Sumamente capaz					
20. Enseñar estrategias de búsqueda en acervos físicos para la lectura comparativa de fuentes.	1	2	3	4	5
21. Enseñar estrategias para la lectura comparativa de varias fuentes.	1	2	3	4	5
22. Enseñar estrategias para evaluar la confiabilidad de varios tipos de fuentes.	1	2	3	4	5

23. Enseñar estrategias para evaluar la confiabilidad del contenido de varios tipos de fuentes.	1	2	3	4	5

3.2. FRECUENCIA

Indique con qué frecuencia sus clases incluyen

1=Nunca 2=Casi nunca 3=Ocasionalmente 4=Frecuentemente 5=Siempre					
24. Actividades en el aula en las cuales los alumnos *buscan* varias fuentes con fines comparativos	1	2	3	4	5
25. Tareas en las cuales los alumnos *buscan* varias fuentes con fines comparativos	1	2	3	4	5
26. Actividades en el aula en las cuales los alumnos *lean* varias fuentes de manera comparativa.	1	2	3	4	5
27. Tareas en las cuales los alumnos *lean* varias fuentes de manera comparativa.	1	2	3	4	5
28. Actividades en las cuales los alumnos *evalúen* la confiabilidad de varias fuentes	1	2	3	4	5
29. Tareas en las cuales los alumnos *evalúen* la confiabilidad de varias fuentes	1	2	3	4	5
30. Actividades en las cuales los alumnos *contrasten* sus propias ideas sobre un tema con aquellas encontradas en varias fuentes.	1	2	3	4	5
31. Tareas en las cuales los alumnos *contrasten* sus propias ideas sobre un tema con aquellas encontradas en varias fuentes.	1	2	3	4	5

3.3 PLANEACIÓN

Indique la frecuencia con la cual realiza las siguientes actividades como preparación para sus clases que involucran trabajo con varias fuentes (textos, imágenes, videos, revistas que proporcionan información).

1=Nunca 2=Casi nunca 3=Ocasionalmente 4=Frecuentemente 5=Siempre					
32. Busco fuentes adicionales a las proporcionadas por la SEP.	1	2	3	4	5
33. Busco fuentes multimodales (texto, fotos/dibujos, videos).	1	2	3	4	5

1=Nunca	2=Casi nunca	3=Ocasionalmente	4=Frecuentemente	5=Siempre				
34. Busco fuentes en sitios web gubernamentales.				1	2	3	4	5
35. Evalúo la confiabilidad de las fuentes.				1	2	3	4	5
36. Identifico diferencias y semejanzas entre la información de distintas fuentes.				1	2	3	4	5
37. Selecciono fuentes que contienen información complementaria (un texto añade a lo que dice el otro).				1	2	3	4	5
38. Selecciono fuentes que contienen la misma información.				1	2	3	4	5
39. Selecciono fuentes que contienen información discrepante.				1	2	3	4	5
40. Selecciono sólo fuentes confiables.				1	2	3	4	5
41. Evalúo la confiabilidad de las fuentes con base en el medio de publicación.				1	2	3	4	5
42. Evalúo la confiabilidad de las fuentes con base en la reputación de los autores.				1	2	3	4	5
43. Evalúo la confiabilidad de las fuentes con base en su uso del lenguaje.				1	2	3	4	5
44. Selecciono fuentes en internet que son de fácil acceso para mis alumnos				1	2	3	4	5
45. Selecciono fuentes que traten temas motivantes para mis alumnos.				1	2	3	4	5
46. Selecciono fuentes con contenido complementario al de los libros de texto.				1	2	3	4	5
47. Selecciono fuentes que traten el mismo contenido que el libro de texto.				1	2	3	4	5
48. Selecciono fuentes con un diseño visual atractivo para mis alumnos.				1	2	3	4	5
49. Identifico posibles puntos difíciles de comprender en varias fuentes.				1	2	3	4	5
50. Identifico posibles puntos difíciles de vincular entre varias fuentes.				1	2	3	4	5
51. Consulto ficheros (guías de actividades)				1	2	3	4	5

3.4 EVALUACIÓN

3.4.1 Tipo de evaluación diagnóstica, formativa y sumativa

Indique si realiza los siguientes tipos de evaluación para las siguientes actividades que involucran la lectura comparativa de múltiples fuentes. Marque todos los aplicables.

1=No lo evalúo 2=Diagnóstica 3=Formativa 4=Sumativa 5=Autoevaluación 6=Coevaluación 7=Heteroevaluación							
52. Evalúo las estrategias (por ejemplo, usar organizadores gráficos) de lectura comparativa de varias fuentes de manera	1	2	3	4	5	6	7
53. Evalúo el conocimiento previo de los contenidos en el contexto de actividades de lectura comparativa de múltiples fuentes	1	2	3	4	5	6	7
54. Evalúo que los alumnos entiendan las instrucciones de los proyectos que requieren la lectura comparativa de múltiples fuentes de manera	1	2	3	4	5	6	7
55. Evalúo la comprensión sintética de los temas que implican la lectura comparativa de múltiples fuentes.	1	2	3	4	5	6	7
56. Evalúo la confiabilidad de las fuentes que utilizó el alumno para la elaboración de un proyecto que implica la lectura comparativa de múltiples fuentes.	1	2	3	4	5	6	7
57. Evalúo el aprendizaje de aspectos lingüísticos como: uso de conectores, uso correcto de comillas para citar, formato de citas parentéticas, inclusión de referencias en actividades que implican la lectura comparativa de múltiples fuentes.	1	2	3	4	5	6	7

Evalúo otros aspectos (especifique): _____

APPENDIX 3.

Evaluation format for experts (Dimension 3.1)

Estimados jueces, los siguientes ítems han sido diseñados para medir las percepciones de autoeficacia del profesor de educación secundaria para la enseñanza de la lectura comparativa de múltiples fuentes…

Búsqueda (B): Estrategias de búsqueda información
Vínculos (V): Estrategias de integración intertextual
Evaluación de contenido (EC): Estrategias de evaluación del contenido semántico de la fuente/texto/documento
Evaluación de la Fuente (EF): Estrategias de evaluación de la fuente
General (G): Actividades de diseño e implementación de estrategias de enseñanza, aprendizaje y evaluación de múltiples fuentes

Le solicitamos su cooperación clasificando los ítems…

De igual manera le pedimos que evalúe el grado de **Relevancia** de los ítems según las categorías de "**Muy relevante=3", "Algo relevante=2", "Irrelevante=1" y No aplica= 0**.

Si desea agregar algún comentario puede hacerlo al final de la tabla.

Gracias por su colaboración.

4.1 AUTOEFICACIA
Indique qué tan capaz se siente de realizar las siguientes actividades de lectura comparativa de varias fuentes

Ítem	B	V	EF	EC	G	Relevancia
1. Implementar secuencias didácticas que involucren la lectura comparativa de varias fuentes.						
2. Enseñar estrategias de búsqueda en acervos físicos para la lectura comparativa de fuentes.						
3. Identificar diversas estrategias para evaluar la confiabilidad del contenido de varios tipos de fuentes.						
4. Identificar diversas estrategias de lectura comparativa de varias fuentes.						
5. Utilizar diferentes métodos didácticos para enseñar estrategias de lectura comparativa.						
6. Enseñar estrategias para la lectura comparativa de varias fuentes.						
7. Enseñar estrategias para evaluar la confiabilidad del contenido de varios tipos de fuentes.						
8. Enseñar estrategias para evaluar la confiabilidad de varios tipos de fuentes.						

9. Diseñar instrumentos para evaluar la comprensión de lectura comparativa de varias fuentes.					
10. Buscar diversas fuentes físicas pertinentes para mis actividades docentes.					
11. Diseñar secuencias didácticas que involucren la lectura comparativa de varias fuentes					
12. Buscar diversas fuentes en línea pertinentes para mis actividades docentes.					
13. Identificar diversas estrategias para evaluar la confiabilidad de varios tipos de fuentes.					
14. Implementar instrumentos para evaluar la comprensión de lectura comparativa de varias fuentes.					
15. Enseñar estrategias de búsqueda en internet para la lectura comparativa de fuentes.					