UNIVERSITÀ
DEGLI STUDI
FIRENZE

DOTTORATO DI RICERCA IN
SCIENZE DELLA FORMAZIONE E PSICOLOGIA

CICLO XXXI

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Narrative Competence: From emergence to mastery

Settore Scientifico Disciplinare M-PSI/04

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Anni 2015/2018

English Abstract

Narrative competence is considered a complex mental process wich requires the integration of cognitive and metacognitive domains, as well as the use of conventionalized ways of communication and decontextualized language. Narrative competence is crucial to later children's literacy development and to integrate meaning from experience. Although literature reported interesting results regarding the development of children narrative skills, a clear picture of the relationship between preschoolers' oral narrative competence and subsequent written narrative competence in a transparent language system, as Italian, is lacking. Furthermore, there is a paucity of research on the developmental trend of narrative competence expressed through oral and written language over primary school. The aim of the present doctoral thesis was to explore the development of oral and written narrative competence. In this context, transitions provide precious information. The main transition concerns with the passage from emergent to formalized literacy (kindergarten – 1st year of primary school), which corresponds to the passage from oral to written language. A further source of information concerns with the the transition from the ealy acquisition of writing skills (early years of primary school) to the mastering of the medium of writing (last years of primary school).

In the first longitudinal research, the transition from emergent to formalized literacy was considered by following a sample of children from the last year of kindergarten to the end of the 1st year of primary school. A subtle development trend of narrative competence, from the oral form in kindergarten to the written form in primary school, emerged in the major part of the measures considered. The predictive role of preschoolers' oral narrative competence measures on the later written narrative competence was found to be significant (Study I); however, that continuity disappeared when considering a sub-group of children with ortographic difficulties (Study II).

In the second cross-sectional research, the transition from the early to the more advanced phase of primary school was considered by involving a sample of children belonging to the second, third, fourth, and fifth classes. A significant improvement was observed in writing narratives, whereas oral narratives did not show a significant increase, except for linguistic indices (Study III).

Regarding children belonging to the second and third classes, the quality of narratives produced was better in the oral modality, while regarding children belonging to the fourth and fifth classes, the written and oral narratives showed substantially the same level (Study IV). Finally, the models of relationships between oral and written narrative competence highlighted both within-domain and between-domains' associations, especially in children belonging to the second and third classes, providing information about the central role that oral language plays in the early years of of primary school. Conversely, a more solid and autonomous status of written narrative competence emerges in older children, because of the prevalent associations within the domain of

written narrative competence. Taken together, these studies provide information and cues of reflection on the development of narrative competence from its emergence, in the period of emerging literacy, to its progressive mastery, in the period of schooling, considering both the oral and written language. The present contribution highlighted both aspects of continuity and discontinuity between oral and written narrative competence, underlying the importance of orality in the early years of schooling, but, at the same time, the need to acquire an adequate writing automaticity to continue expressing narrative abilities, previous acquired by orality. A strong integration between oral and written narrative competence emerged in the early years of primary school, when children are faced with the acquisition of written language. Subsequently, in more advanced years of primary school, the child's approach to the written language proceeded with a more independent and diachronic acquisition with respect the oral language, as demonstrated by the strong relationships of measures within the domain of written narrative competence, rather than between-domains.

Keywords: narrative; narrative development; oral language; writing; primary school

Italian Abstract

La competenza narrativa è considerata un processo mentale complesso che richiede l'integrazione di diversi domini cognitivi e metacognitivi, così come l'utilizzo di forme convenzionali di comunicazione e di linguaggio decontestualizzato. La competenza narrativa risulta essere cruciale ai fini del processo di alfabetizzazione dei bambini e per astrarre significati dalle proprie esperienze. Sebbene la letteratura abbia riportato risultati interessanti sullo sviluppo delle abilità narrative nei bambini, sembra mancare una chiara visione del rapporto tra la competenza narrativa espressa a livello orale in età prescolare e la successiva competenza narrativa espressa tramite il linguaggio scritto in età scolare in bambini appartenenti ad un sistema di linguaggio trasparente, qual è quello italiano. Vi è, inoltre, una scarsità di ricerche che hanno investigato le tendenze di sviluppo della competenza narrativa espressa tramite il linguaggio orale e scritto nel corso della scuola primaria. Lo scopo della presente tesi di dottorato è stato quello di esplorare lo sviluppo della competenza narrativa nella forma orale e scritta. In questo senso, lo studio delle transizioni permette di ottenere informazioni preziose. La principale transizione riguarda il passaggio dall'alfabetizzazione emergente a quella formalizzata che coincide con il passaggio dalla competenza narrativa orale a quella scritta. Un'ulteriore fonte di informazioni interessanti riguarda la transizione dalle fasi iniziali di acquisizione del linguaggio scritto alla padronanza del mezzo nelle fasi avanzate di scuola primaria.

Nella prima ricerca di tipo longitudinale è stata considerata la transizione dall'alfabetizzazione emergente a quella formalizzata seguendo un campione di bambini dall'ultimo anno di scuola dell'infanzia fino alla fine del primo anno di scuola primaria. Una tendenza di sviluppo della competenza narrativa, da forma orale nella scuola dell'infanzia a forma scritta nella scuola primaria, è emersa nella maggior parte delle misure considerate. La competenza narrativa orale, posseduta dai bambini in età prescolare, è emersa come predittore significativo della successiva competenza narrativa espressa tramite il linguaggio scritto alla scuola primaria (Studio I); tuttavia, tale continuità risulta non manifestarsi nel momento in cui si considera un sottogruppo di bambini con difficoltà ortografiche (Studio II).

Nella seconda ricerca, di tipo trasversale, è stata considerata la transizione dagli stadi iniziali a quelli più avanzati di scuola primaria coinvolgendo un campione di bambini delle classi seconde, terze, quarte e quinte. Si è osservato un significativo miglioramento nella produzione di narrazioni scritte, mentre le narrazioni nella modalità orale non hanno mostrato un significativo incremento, tranne che per gli indici linguistici (Studio III).

Per quanto riguarda i bambini di classe seconda e terza, la qualità delle narrazioni prodotte è risultata migliore nella modalità orale, mentre nei bambini di quarta e quinta, le narrazioni scritte e orali hanno mostrato sostanzialmente lo stesso livello (Studio IV). I modelli di relazioni tra

competenza narrativa orale e scritta, infine, hanno evidenziato associazioni intra-dominio e inter-domini, specialmente nei bambini di seconda e terza, fornendo informazioni circa il ruolo centrale che la lingua orale svolge nei primi anni di scuola primaria. Nei bambini più grandi, invece, emerge uno status più solido e autonomo della competenza narrativa scritta emerge per via delle associazioni prevalenti all'interno del dominio. Considerati nel loro insieme, gli studi presentati forniscono spunti di informazione e riflessione circa lo sviluppo della competenza narrativa dal suo emergere, nel periodo di alfabetizzazione emergente, alla sua progressiva padronanza, nel periodo di scolarizzazione, considerando sia il mezzo di espressione orale che quello scritto. Il presente contributo ha evidenziato sia aspetti di continuità che discontinuità tra la competenza narrativa orale e scritta, sottolineando l'importanza dell'oralità nei primi anni di scolarizzazione, ma allo stesso tempo la necessità di acquisire un'adeguata automaticità di scrittura per continuare ad esprimere le abilità narrative acquisite precedentemente nell'oralità. Una forte integrazione tra la competenza narrativa orale e quella scritta è emersa nei primi anni di scuola primaria, fase in cui i bambini si trovano ad affrontare l'acquisizione della lingua scritta. Successivamente, negli ultimi anni di scuola primaria, il percorso di avvicinamento del bambino al linguaggio scritto ha proceduto con un'acquisizione più indipendente e diacronica rispetto al linguaggio orale, come dimostrano le forti relazioni all'interno del dominio della competenza narrativa scritta, piuttosto che tra domini.

Parole chiave: narrazioni; sviluppo narrativo; linguaggio orale; scrittura; scuola primaria

Abbreviations

ST	Structure
CO	Cohesion
COr	Rate of incoherences
WF	Words fluency
SP	Sentence productivity
NC	Narrative competence
_wr	Written narratives
_or	Oral narratives

List of publications

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Chapter 1 Introduction

Participate in the literate community means to master its written and spoken modalities of communication (Tolchinsky, 2009). The acquisition of the ability to go beyond the single meaning of few words to construct a "waeving" of meanings (Kintsch, 1988; Levelt, 1989) is one of the important pieces of learning. The context of narratives offers the opportunity to engage with children's creative thinking processes, which set them in communication with others (Bamberg, 2006). Through narratives, children construct and understand the world around them and their living experiences (Garvis & Pramling, 2017). Further, it represents one of the major means of learning, in being used to represent, to integrate the old and new together, and to use new concepts and processes (Barnes, 1992).

The development of narrative competence was primarily investigated in the field of "Emergent Literacy" when children are in their kindergartner (typically between birth and age 5). The construct of "Emergent Literacy" include the knowledge and abilities related to the alphabet, phonological awareness, symbolic representation, and communication (Clay, 1966; Rhode, 2015). A child growing up in a community of adult speakers is faced with the task of constructing for himself a similar set of rules which underpin him/her understanding and speaking the surrounding language. Thus, well before formal literacy children became aware of definte rules about what constitutes appropriate narratives, thanks to their active engagement in the nature of socio-relational situation and to the socio-linguistic expectations (Cashdan, 1975). Their ability to construct narratives basing on oral language has been the subject of much inquiry and experimental study, some of them concentrated to story telling (children are asked to provide a story) and retelling (children first listen to a model story and are then asked to retell the story in their own way), basing on several indicators of a story's quality (structure, cohesion, and coherence) (see, Pinto, Tarchi, & Accorti Gamannossi, 2018; Pinto, Primi, Tarchi, Bigozzi, 2017; Pinto Tarchi, & Bigozzi, 2016) and to the use of mental lexicon (Pinto, Tarchi, Accorti Gamannossi, & Bigozzi, 2016), based on the assumption of children's language ability as closely linked to their theory of mind understanding (Antonietti, Liverta Sempio, & Marchetti, 2006; Massaro & Castelli, 2009). Deeply rooted in oral language in kindergarten, narrative competence flows in the writing language at the onset of formal, compulsory schooling. In the educational context, narratives concern with two means of expression that are the oral and the written language. Actually, a clear picture of

relationships between narrative competence across oral and written language is lacking (Pinto, Bigozzi, Gamannossi, & Vezzani, 2012), since oral and written development has been studies in a separate way. The studying the development of the narrative competence in specific transitions (*emergent-to-formalized literacy* and *initial phase-to-more advanced phase of formalized literacy*) require facing with both children's oral and early written composing skills. The aim of this dissertation was to provide an advancement of the literature by exploring the predictive role of preschool oral narrative competence on their later early written composing skills (*emergent-to-formalized literacy*) and by the studying of the development and relationships between oral and written narrative competence's measures through primary school years (*initial phase-to-more advanced phase of formalized literacy*).

When we speak about 'telling a story' we have some sorts of issues in mind: (1) the maturative and evolutionary aspects; (2) the context specificity through which this process emerges (oral *vs.* written form) which exerts an influence on the product.

Regarding the first issue, over children's development, narratives appear different because of the influence of a maturative effect. The simplest narrative is a sequence of words combined in simple sentences. Very young children are able to produce such narratives. They still cannot conceive of the full range of encodable perspectives (cognitively) (for a comprehensive review, see Mar, 2004). Further, they cannot fully assess the listener's viewpoint (communicatively). Finally, they do not command the full range of formal devices (linguistically). Progressively, children construct higher-order events, in which event phases are subordinated and interrelated (Berman, 1988; Losh & Capps, 2003).

Regarding the second issue, the presence of the interlocutor, the narrative prompt, and the medium (oral *vs.* written channel) influence the final product. In particular, the medium interacts with the mental process leading to comunicative and cognitive consequences. From the early phases of development, children are engaged in the production of narratives through the oral language. The needs to reflect on their experience to be communicate or simple socio-relational needs are promotor of this competence. In the preschool period, children need to elaborate their thoughts and to integrate them into a coherent mental model to be communicate, using a combination of words and respecting the syntactic form of oral language. In the meantime, their higher-level processes of monitoring and reviewing are activated (Losh & Capps, 2003; Berman & Slobin, 1994). Subsequently, in the scholastic period, children can produce narratives through both oral and written

language. The period of formalized literacy underpins the acquisition and development of the writing language that could represent an enhancing process, but also the reverse. The use of the written code can challenge children's narrative competence. As demonstred by the model of writing advanced by Berninger and Swanson (1994) and Hayes (2012), in the first stage of writing acquisition children need to proficiently develop the low-level skills (*in primis*, handwriting and spelling) to fluently activate the higher-level cognitive processes (planning, monitoring, and reviewing) and avoid the overload of underlying processes involved (i.e., working memory, attentional processes, and cognitive flexibility) (Goldberg *et al.*, 2005).

The maturative and the context-dependance issues are of particular interest in considering the transition from emergent to formalized literacy, as well the transition from the initial to a more advanced stage of primary school. The first transition (*emergent-to-formalized literacy*) mirrors the passage from the safety of the oral code to the challenging of the written one's. With this respect, it would be interesting to investigate what happens to the narrative competence of children passing through the oral to written language, considering the role of lower-level processes, such as spelling skills

The second transition in primary school (*initial phase-to-more advanced phase of formalized literacy*) mirrors the passage from the initial acquisition to a consolidated mastering of the written code. With this respect, it would be interesting to explore the developmental trend of narrative competence expressed through both oral and written language. Further, it would be interesting to compare narrative competence between the oral and the written form in the early years of schooling, as well as in more advanced years and to explore their relationships.

The general aim of this thesis was to explore children's narrative competence in different evolutive scenarios and in relation to the context dependency of the oral and written language.

In chapter 1 the introduction of the research field of narrative competence will be presented.

In chapter 2 the literature overview will be presented. The definition of narrative competence, as well as research issues through the theoretical lenses of emergent and formalized literacy will be discussed. Finally, the issue of how to measure narrative competence in children will be faced by referring to the current literature.

In chapter 3 a longitudinal study was presented. In this study the evolutive scenario of the transition between emergent to formalized literacy was considered. It mirrored the passage from kindergarten children's oral narrative skills to first grader children's written narrative skills. The study I wondered whether kindergarten children's narrative competence is easily transferred into written language, or conversely challenged. In study II, the predictive power of textual narrative competence on early narrative text writing skills was tested, considering the impact of spelling ability. Preschoolers were followed longitudinally until the end of their 1st grade of primary school. The result of the studies allowed to reflect about how the medium of writing might interfere (based on the level of mastery) with the opportunity to express narrative skills in the transition from the oral to the written code. The central role of the functionality of the writing instrument opens the way to practical implications.

In chapter 4 a cross sectional research design was used with 2nd-to-5th-graders primary school children belonging to a transaperent language context, as Italian. In the two presented studies, the evolutive scenario of the transition from the early years of writing acquisition (2nd and 3rd grades) to more advanced years (4th and 5th grades) was considered. The study III wondered whether the development of narrative competence showed a quite overlapping trend both in oral and written code. Further, the study IV aimed to compare narrative competence performance expressed both via oral and written language within a group of novice writers (2nd and 3rd graders) and within a group of more advanced writers (4th and 5th graders). Finally, the study V investigated the associations of oral and written narrative competence's measures in the same two groups of children (novice writers and more experienced writers).

With the study III, the changes in rates of oral and written narrative competence indicators were examined. Results highlighted that older children tended to produce well-performed written stories. Instead, in oral narratives a significant increasing with the level of study was detected only for linguistic indicators. Furthermore, with the study IV, the differences in the overall quality of both oral and written narratives in a goup of novice writers and in a group of more experienced writers were investigated. The results of the comparison of oral vs. written narratives in the first group showed a significant difference in favour of oral narratives. Instead, no significant differences were detected in the second group of more advanced primary school children, except for the use of linguistic devises, in favour of the oral channel. Finally, with study V significant within-and-between domains relationships (oral narrative competence and written narrative competence) were showed.

The information concerning the narrative abilities of children in different developmental and educational phase is essential in giving information about strenghs and weakness children can show when narrating.

Chapter 2 Literature review

2.1 Narrative Competence: Defining the topic

The expression of "narrative competence" is used to describe a complex ability which allows to produce *textus*, etimologically it means "waeving" of meanings (Kintsch, 1988; Levelt, 1989). The sense of *telling* is strictly connected with *relating* children's conceptions of events into words to be combined into meaningful mental representation with the aim to be communicated (Bruner, 1990; Nelson & Van Meter, 2007). This ability relies on a set of mental activities based on cognitive, communicative, linguistic, metacognitive, and pragmatic processes. They are dependant from the medium through which *textus* are produced, oral or written, and they interact in different and complex ways through the development (Hudson & Shapiro 1991, Johnston 2008; Leinonen *et al.*, 2000).

According to Terry, Mills, Bingham, Mansour and Marencin (2013) and Georgapoulou (2005), narrative competence is considered a cognitively complex process in being decontextualized. Decontextualize language means that the narrator thinks beyond the immediate context to convey meaning through linguistic devices (e.g., syntax, vocabulary) and meta-linguistic aspects (e.g. structure, coherence) about abstract events or experiences that are not accessible in the *qui et ora*. In contrast, contextualized language relies heavily on non-linguistic indicators (e.g., gestures, facial expression), on the shared knowledge between the narrator and the listener, and on contextual cues from the immediate environment (Cummins, 1991; Curenton & Justice, 2004). According to Georgakopoulou (2005), thorugh the construction of a story children can exert their simbolique function to represent reality and their internal experience of reality.

From these reasons, for decades the construct has been studied through the lenses of several theoretical research traditions which highlighted different aspects of this competence (for a review, see Quinn & Bingham, 2018). In exploring narrative competence, its importance with respect later children's literacy, language, cognitive development, and achievement emerged (e.g., Dockrell & Connelly, 2009; Oakhill & Cain, 2012). Early narrative competence is fundamental for the development of subsequent literacy skills. The study of the development of narrative competence plays a significant role in the perspective of emergent literacy (Rohde, 2015) in which it configures a bridging

ability between oral and written language. Studies in the field of the construct of emergent literacy permitted to identify the wide range of skills, knowledge, and attitudes considered to be the antecedents of children's literacy development (Lonigan Burgess, & Anthony, 2000; Teale & Sulzby, 1986). In doing so, it conceives the acquisition of literacy as a developmental continuum deeply rooted in the life of the child, rather than considering primary school as the starting point for studying. Several studies gave support to the hypothesis that preschool measures can be used to predict mechanics of writing in primary school. Alongside abilities, such as phonological and visual-motor skills (Mäki, Voeten, Vauras, & Poskiparta, 2001), some studies demonstrated how kindergarteners' narrative competence is predictive of writing skills (Pinto, Tarchi, & Bigozzi, 2015; Whitehurst & Lonigan, 1998), but also future reading (Paris & Paris, 2003), and school success more in general (Feagans & Appelbaum, 1986; Spencer & Slochum, 2010). In comparing results coming from different studies, it needs to put attention to the nature of the language system. The major part of studies relies on English-speaking children learning an alphabetic and non-transparent writing system (i.e. Sénéchal & LeFevre, 2002; Whitehurst & Lonigan, 1998; 2002). This unbalanced make difficult to generalize finding into different language system, such as transparent language systems, as Italian. Some of the few studies involved in the field of emergent literacy in the transparent language system of Italian permitted to confirm the relevant role of textual competence in the model of emergent literacy. Three main indicators were detected in children's oral narrative productions as following: the structure, which is characterised by the presence of components of a story (e.g. the conventional opening, the characters, the performance, the solution to the problem, etc.) (Stein & Glenn, 1982); the cohesion, which is characterised by the presence of linguistic modalities (connectives, pronouns, etc.); and the coherence, given by lack of inconsistencies between judgments (Shapiro & Hudson, 1991). Using a longitudinal perspective, Pinto et al. (2009) demonstrated that this factor does not appear to be predictive of initial writing, leading to hypothesize its possible predictive role of the narrative competence in primary school.

Also, links with social life emerged, since narratives constitue a practice of discourse that makes it possible to efficiently participate in conversations, to explain things, and events and to communicate stories, personal experiences to others (McCabe & Marshall, 2006). Recently, narrative competence has assumed relevance with respect the clinical settings, since it constitue a significant mean through which identify both communication disorders

or language impairments (Botting, 2002; Diehl, Bennetto, & Young, 2006), as well as and the functioning of theory of mind in providing a context to engage with mental states (Accorti Gamannossi & Pinto, 2016; Guajardo & Watson, 2002).

2.2 To measure children's narrative competence

Free narrative productions represent a valid and ecologic task through which detect precious source of information of cognitive, linguistic, and metacognitive knowledge and processes. In Western cultures, the story of fantastic stories, the accounts of personal experiences and scripts have been studied in the psychological literature as true textual genres (Baumgartner & Devescovi, 2001). The free narrative writing or telling has been used by researchers to investigate children narrative competence, especially in the last period of emergent literacy and during formalized literacy. It represents an ecologic task, since it is very close to the daily scholastic and familiar activities. As suggested by Pinto et al. (2012), children's daily and meaningful experiences with the world of stories, as well as their active role in constructing knowledge and reflection over their experience underpin the development of the symbolic function of narrative competence and to develop a tacit knowledge of this form of communication (Laughton & Morris, 1989; Montague, Maddux, & Dereshiwsky, 1990), and an internalization of the linguistic structure of literate (written) language. Basing on this task, children is required to produce an invented story by means of oral or written language. The task therefore requires the following processes:

- Regarding oral language, to elaborate their thoughts and to organize them into a coherent mental model to be communicate, using a combination of words and respecting the syntactic form of oral language. In the meantime, their higher-level cognitive processes of monitoring and reviewing are activated.
- Regarding written language, to elaborate their thoughts and to organize them into a coherent mental model to be communicate, using a combination of words to be transcribed into written language adhering to conventionalized rules. Written language allows to be revised when composing.

Given the complexity of the processes involved in the narrative task, to truly comprehend narrative composing a multifaced way of assessment is needed. In order to capture different aspects of narratives, the tendency in using a single measure is to be rejected towards the integration of multiple measures (see, Quinn & Bingham, 2018). Basing on previous researches (see, Pinto et al., 2016; Pinto et al., 2018), in this dissertation we referred to narrative competence through the consideration of both linguistic and meta-linguistic aspects.

2.2.1 Meta-linguistic elements

The structure differentiates a story from other types of narratives. It can be considered as such in so far as it presents the specific elements of the text genre it belongs to (Pinto, 1993). A line of research on the production and comprehension of texts is constituted by the grammar of stories: an expression aimed at highlighting how the organization of history, like the construction of a sentence, is built based on arbitrary and shared rules (Levorato, 1988). We can identify five constituent elements that obtain the consensus among the various authors (Baumgartner & Devescovi, 2001):

- a formal beginning, punctuated by the classic expression 'once upon a time', with which the characters and context are introduced;
- the initial event that gives rise to the story and which leads the protagonist to represent his own goals, given the triggering event;
- the protagonist's attempts to implement the planned action and external obstacles and / or aids;
- the resolution of the problem. the consequences and the conclusion, which generally ends with the expression 'and they lived happily ever after'.

In addition, the index of coherence allows the text to acquire a unity of meaning, thanks to the interpretive activity of the reader / listener who is called to make inferences, to reinterpret the text in a manner which is consistent with previous experiences and knowledge (Schneider, Dubé, & Hayward, 2005; Van der Lely, 1997; Wigglesworth, 1990).

2.2.2 Linguistic elements

In the construction of a text, both oral and written, it is cohesion that creates links between sentences (Halliday & Hasan, 1976). The continuity within and between the various narrative sequences must be reached through the use of linguistic modalities, such as pronouns, causal and temporal connective, subordinate clauses and all that allows to realize the idea of a all unitary (Hudson & Shapiro, 1991). Therefore, the term "cohesion" comprehends all the functions, syntactic or grammatical, that allow us to connect the different parts of a text in a fluid and continuous way (Pinto, 1993). In this dissertation, we referred to the sentence-level productivity of a story (Justice *et al.*, 2006; Liles, Duffy, Merritt, & Purcell, 1995; Hughes, McGillivray, & Schmidek, 1997), measured as number of T-units (minimal terminable unit) (sentence productivity), and to the word-level productivity, measure as total number of words (words fluency).

Some studies demonstrated that narrative competence represents an integrated construct, since indicator of well-performed narrations were associated. The study of Pinto et al. (2018) showed that structure and coherence components correlated within task at both assessment times. Results that find also cross-cultural support, since a study of Kit-Sum To, Stokes, Cheung, and T'sou (2010) among typically developing Cantonese-speaking children, found that syntactic complexity, narrative vocabulary, referencing, and the use of connectives were highly correlated.

2.3 The Development of Oral Narrative Competence

2.3.1 The roots of narrative competence

Our research interest is aimed at studying narrative development in that period of transitions. The first one considered interested pre-school to formalised school. Well before formal instruction in primary schools, which in Italy begins when children are 6 years old, about ninety-five percent of 3- to 5-year-old children attend pre-school and are in daily contact with the language. They learn a great deal about this form of communication and its rules (Pinto et al., 2012). Language development takes place with

wide variability between subjects and its unfolding occurs through interpersonal relationships (the interpersonal mode of meaning), through construction and reflection on experience (the ideational mode of meaning) and through contact and entering discourse (the textual mode of meaning) (Shiel, Cregan, McGough, & Archer, 2012). In line with the development of oral language, which emerges with individual and socio-cultural diversities, written language unfolds and is deeply rooted in the early experiences of the child's life (Ravid & Tolchinsky, 2002). Children enter first grade having emergent literacy, that is, prior knowledge about reading, writing, and story composition based on their spoken language (Adams, 1990; Levin, Share, & Shatil, 1996). They start to construct a tacit knowledge about narrative structure and produce stories through oral language (Laughton & Morris, 1989; Montague, Maddux, & Dereshiwsky, 1990). In other words, they show their narrative competence going beyond the single meaning unit transmitted by the word to construct a relationship network among words that are in the text (Pinto et al., 2009).

From a developmental perspective, in literature a growing improvement has been observed: if already around 3-4 years children are able to arrange and describe some action sequences (Bamberg, 2006), later, at around 5 years old, children enrich their stories with constituents and produce longer stories (Damico & Ball, 2008). Then, during the early years of schooling, most children have learned to use the narrative structure in its essential aspects and the use of interclausal connectives becomes more sophisticated between 5 and 10 years of age (Shapiro & Hudson, 1991).

Girls seem to perform significantly better than boys on narrative composition. Gender differences are found in several studies. In a study of Berninger and Fuller (1992) 50 girls and 50 boys each in the first, second, and third grades were tested on a variety of writing skills and their results show that girls significantly outperform boys in the most of these. In particular, gender differences were related to narrative composition fluency and to written orthographic fluency, which in turn were related to the better quality of texts. In agreement with these results, are also some earlier findings (Englehard, Walker, Gordon, & Gabrielson, 1994; Mäki et al., 2001) which point out better mechanics of writing and more coherent stories in girls' performances. Even if narrative writing is familiar to students, it represents a demanding task. A lot of students reached low levels or performed above. In this context, instructional interventions were implemented to underpin cognitive and metacognitive processes involved in texts writing (Gelati & Boscolo, 2009).

Studies carried out so far have considered the narratives and their development within the same means of expression, oral or written, however we know little about the transition from oral to written code: "what happens to the child's narrative ability when changing means of expression?". Little attention has been paid to this important change that occurs between 5 and 6 years and to the variability that characterises the deveopment of the oral and written language. Considering these aspects is crucial to deepening our understanding of the mechanisms underlying normal development (Bates, Dale, & Thal, 1995). To fill that gap attemps were moved in the field of emergent literacy perspective. Relevant studies (i.e. Evans, Shaw, & Bell, 2000; Orsolini, Fanari, Tosi, De Nigris, & Carrier, 2006) provide an empirical foundation to the existence of significant connections between pre-school abilities and performance in early and following grades of schooling. For example, Maki et al. (2001) in their longitudinal study from preschool to the 3rd grade gave support to the hypothesis that preschool measures of both phonological and visual-motor skills can be used to predict mechanics of writing in 1st and 2nd grade. Other research has advanced models of competences involved in emergent literacy for English-speaking children learning an alphabetic and non-transparent writing system (i.e. Sénéchal & LeFevre, 2002; Whitehurst & Lonigan, 1998; 2002) and for Italian-speaking children learning a transparent writing system (i.e. Pinto et al., 2009). From this model it emerges that textual competence is a fundamental factor in emergent literacy, demonstrating that before formalised teaching children have an idea of the text and that three main elements can be traced in their oral productions: the structure, which is characterised by the presence of components of a story (e.g. the conventional opening, the characters, the performance, the solution to the problem, etc.) (Stein & Glenn, 1982), the cohesion which helps to unite the individual sentences with linguistic modalities (connectives, pronouns, etc.) and the consistency, given by lack of inconsistencies between judgments (Shapiro & Hudson, 1991). This factor does not appear to be predictive of initial writing, but one might expect that it could have a successive influence on children's advanced text writing abilities.

2.3.2 Oral narratives in the school setting

Oral language represents an essential pillar in the process of children's learning and thinking development, since it represents a medium through which children learn to organize thinking and construct concepts (Lyle, 1993). Throughout life, oral language

skills remain an essential means to democrately participate in the social community (Tolchinsky, 2009).

The contribution of oral language skills in underpinning the development of written language is widely shared (Dockrell & Connelly, 2009), especially in considering the early stages of learning to write. Researchers helped in understanding how complex is the process to develop an interwings of meaning though oral narrations. Thinking processes, knowledge, and other cognitive and metacognitive skills were involved. The practice to construct and communicate a story is deeply rooted in the experiences of children from the earliest days of life (Bamberg, 2016). In the emergent literacy period when children are in their kindergarten, an evident improvement of this ability is substained by maturative processes, in terms of linguistic and cognitive development. Subsequently, when it is required to start attending formalized education, children are holding a wealth of knowledge about the use of language in a complex and creative way, as narratives, alongside with the rules of this specific textual genre, and the use of decontextualize language. Deeply rooted in their oral language, children are now asked to tendentially use written language in producing narratives. In fact, curriculum is widely focused in the teaching of writing and reading, instead only a small part of this is interested in underpinning the ability to create and proficiently communicate complex discourse through oral language. In addition, there is the commonly shared belief that oral language acquisition is a natural process which occurs almost without effort. The existence of maturative processes, both linguistic and cognitive, able to underpin and promote the development of oral language discourse is not questionable, however the role of the surrounding environment (i.e., family, school) in helping children to be more fluenty, clear, and sensitivity to the audience's needs. We should be notice that as well as written productions, also oral productions represent a still widely used modality to test children comprehension and studying activity.

2.4 Narrative competence and writing in the school setting

During primary school years, children is exposed to a systematic teaching of writing from the point of view both of word (spelling) and text level (lexic, structure, cohesion, and coherence) (Italian Ministry of Education, University and Research, 2012).

In the though of Vygotskij (1962), writing is considered an essential tool of thinking and relation with the sourranding word. For example, as suggesting by Graham (1982), in the school setting it represents an important medium to though and recording concepts. It constitues an evaluative product to test students' knowledge. It is a tool through which express emotional needs. Stated its relevance, the development of writing requires *'conscious persistence, flexibility, and high-level thinking ability'* (Graham, 1982; p. 2).

Reseachers have been deeply engaged in the studying of the development of written language. As we actually know, beginning writers are mainly engaged in mastering handwriting and transcription skills. The so called 'lower-level processes' by Hayes' model (2012). Researchers agree in considering this step particularly challenging for young children engaged in translating their ideas into text (Graham & Harris, 2000). In fact, the passage of translating idea to composing text require several processes: the generation and evaluation of ideas to be communicated, the transposition of these in written language by observing grammatical, and spelling rules of the language system of belonging (Graham, 2006; Kellogg, 1996). As demonstrated by other studies, handwriting or spelling skills difficulties may contribute to disrupt text construction processes, due to the high cognitive loading. This relationship is particularly evident in opaque orthographies, such as English, since young writers are often challenged by spelling (Dockrell & Conelly, 2015). It is not a case that young writers tend to report idea in writing, as they come to mind as an adaptive function (Graham, 2018). By using the metaphor of Bereiter and Scardamalia (1987) they use a *knowledge-telling approach*, able to minimize the cognitive loading of other processes (planning, monitoring, and evaluating when writing). In this first period of schooling, writing instruction directs their attention and effort in underpinning children automaticity of transcription skills.

It is expected that, increasing with the level of study, children master handwriting and transcription skills and they become more proficient in expressing their ideas, mental models into texts. According to the more shared models of writing (Berninger & Swanson, 1994; Hayes, 2012; Hayes & Flower, 1980), when composing texts, they are engaged in several cognitive processes: planning, translating, and reviewing while composing text. They constitued the so called 'high level processes.' Hayes (2012) suggested the importance to consider the active role of writer as self-regulator of their own processes (see, reviewing and editing processes). This metacognitive level is perhaps more suited to advanced and expert writers than to developing writers, who are still facing with the low-level components. Further, the higher-level processes converged under the heading of

executive functions and working memory. Following empirical evidences, a developmental trend was showed passing through a *knowledge-telling approach* to a *knowledge-transforming approach,* which means to direct the composition of text through our own goals, need to be reached (Scardamalia & Bereiter, 1987). This developmental passage means that primarly children need to proficiently develop the lower-level transcription skills (spelling and handwriting) to progressively free working memory resources in favour of higher-level cognitive processes (planning the discourse structure, organizing, and reviewing) (Berninger et al., 1992; Graham & Harris, 2000; McCutchen, 1996). In fact, it seems that, as children grow up, their narrations develop from multiple point of view: linguistic structure in terms of productivity and syntactic complexity, words fluency, and words variability (Justice et al., 2006; Westerveld et al., 2004), syntax (Reilly, Losh, Bellugi, & Wulfeck, 2004).

A study of Mäkinen, Loukusa, Nieminen, Leinonen and Kunnari (2013) focused on the development of picture-elicited narrations in Finnish children aged between four and eight showed that productivity, syntactic complexity, referential cohesion, and event content improved with age. Other authors observed that increasing with age the improved understanding of a listener's needs underpin an adequate use of referential cohesion (Kit-Sum To et al., 2010; Schneider & Dubé, 1997), even if it remains a still demanding process also in eight-year-olds' stories (Hudson & Shapiro, 1991).

Measures of event content, such as story grammars (Hudson & Shapiro, 1991; Schneider, Hayward, & Dubé, 2006), main ideas (Bishop, 2004) or plot structure (Berman & Slobin, 1994), semantic scores (Kit-Sum To et al., 2010) showed a developmental trend.

Although age related improvements were detected, as observed by Graham (1982), writing development relies upon the overall development of language and cognition, becoming more complex with age and experience. A general agreement is reached in considering the period between the age 9 to the age 13 as interested by gains in writing. However, he further underlined that the growth in the mastery of writing is not regular, but interested by advancement, pauses, and even regression, giving birth of variations. With this respect, some authors noted that the pace of development may start to reduce at around the age of 10 for the linguistic structure (Justice et al., 2006) and at around the age of seven for the story grammar (Schneider et al., 2006). The most evident development was most clearly seen during preschool and early school years.

2.4.1 First steps in learning to write in a highly regular language, such as Italian

Written language develops, like oral language, with individual differences and in relation to the language of belonging (Bates et al., 1995). At the age of six an important change occurs, due to exposure to a deliberate systematic teaching of writing. An important educational goal is to acquire a proper domain of instrumental writing and this requires the development of a complex variety of skills (Struthers, Lapadat, & MacMillan, 2013) and their gradual control: the activation and coordination of orthographic, graph-motor and several linguistic skills, including, but not limited to, semantics, syntax, spelling and writing conventions (Scott, 2005; Singer & Bashir, 2004).

According to Frith (1985), the learning process of writing starts with the use of the phoneme-grapheme conversion mechanism. While children are learning to read in the first year of primary education, they decode words by making a correspondence between one sign and its sounds utilising the sub-lexical route (Coltheart & Rastle, 1994; Coltheart, 2000). Later, when reading and writing are automatic, children start using the semantic-lexical route (Bowey, Vaughan, & Hansen 1998).

The coding of the word by the sub-lexical route is based on phonological-to-orthographic conversion rules (Patterson, 1986; Tainturier & Rapp, 2000) and this takes place through three consequent operations: (1) its segmentation in the individual phonemes, (2) the association between each phoneme and the corresponding grapheme, (3) the production of the word using an orthographic form. Instead, the lexical route relies on accessing word-specific memory (e.g. Barry, 1994). It utilises word-specific knowledge to determine the corresponding translation. In this case, the word's orthographic representation is recalled from the lexical memory and it is immediately avaible also in the phonological form and semantic value (the meaning which the word refers). Detailed discussion of this issue can be found in Coltheart, Rasile, Perry, Langdon and Ziegler (2001).

Recent studies (Notarnicola, Angelelli, Judica, & Zoccolotti, 2012) show that Italian children are able to use the direct pathway (lexical route) of writing very early, but initially resort to the sub-lexical route. Within the first 3 years of schooling children optimize lexical strategies.

It is important to consider that the way in which a child faces the phases is tied to the features of degree of orthographic regularity. Concerning Italian children, learning to write and to transform the words that the writer wants to say into written symbols on the printed page means primarily master the spelling ability.

The complete efficiency of transparent languages' sound-letter rules might seem, at first sight, to eliminate any need to take morphemes into account for correct writing. However, although this might be true of reading, it is not true of spelling (Chliounaki & Bryant, 2007). Although the Italian system is characterised by greater transparency with respect to other languages, such as English, there is a certain degree of ambiguity in the oral-to-written direction (Angelelli, Notarnicola, Judica, Zoccolotti, & Luzzatti, 2010). There are some cases of unpredictable spelling, for example the phoneme /k/ when it occurs before /w/ spelled <u> (but not elsewhere) has two different spellings solution, <c> and <q>, for example the Italian word ['kwore] (heart) is spelt "cuore" and not "quore"; whereas ['kwadro] (painting) is spelt "quadro" and not "cuadro". There is no definite rule by which to establish the correct sequence. The processes of phoneme-grapheme conversion do not guarantee correct execution (Pinto et al., 2012). An accurate performance in orthographic coding requires the recovery of correct graphemic representation, through the use of lexical processes (Angelelli et al., 2010). Skilled writers mainly use the direct pathway (lexical route) and this supports the automation of processes and the deep processing of the word, using minimally sub-lexical processes (Booth, Perfetti, & MacWhinney, 1999).

The acquisition of adequate orthographic competence is crucial for the achievement of advanced writing abilities: the rapid and correct mastery of phoneme-grapheme correspondences is a necessary condition for the beginner writer: the incomplete acquisition of this toolkit is an obstacle to accessing the semantic, syntactic, and textual components of written language (Pinto et al., 2012). Furthermore, Berninger, Mizokawa and Bragg (1991) proposed that difficulties in mastering transcription skills can lead children to avoid writing and develop a mind-set that they cannot write, till to arrest the development of writing.

2.4.2 Orthographic competence's role in writing text

It is expected that gradually the child conveys the instrumental skills of writing at the service of textuality. Text production is a complex activity that involves several processes (Hayes & Flower, 1980; Scardamalia & Bereiter, 1986; Swanson & Berninger, 1996). Berninger (2000) develops a triangle model which conceives writing as the product of transcription (e.g. spelling accuracy and writing fluency), text generation (translation of ideas into language), and executive processes (e.g. self-regulation, attention). The process

is developed through a dynamic working memory with direct links to long- and short-term memory. So, both lower and higher-level processing skills are involved in text production (Hayes & Flower, 1980; Graham, Harris, Fink-Chorzempa, 2002; Kellogg, 1996).

In the early stages, children are mainly engaged in orthographic coding tasks, therefore "low-level" processes are implemented (including also, the representation and the recalling of graphemes from memory, phonological coding skills and knowledge of syntactic structures). Later, when these processes are automated, the child is able to move his/her cognitive resources to the "high-level" processes, such as planning, production and revision (Swanson & Berninger, 1996).

Texts in which children initially engage are mainly narrative, because they are most experimented and related to their extensive experience with this genre from a very early age (Sulzby, 1985). The ability to compose a story in written form implies the ability to select and organise the content, in accordance with a comprehensive plan of the text. An "expert" writer should be able to work simultaneously on different levels of text processing and his/her awareness of narrative structure facilitates the process of planning and review of the written product (Olive & Kellogg, 2002). The mastery of writing at the level of transcription reduces the load of attention, memory, and allows the child to devote himself to the generation of ideas and the text's construction (Babayigit & Stainthorp, 2011).

However, as argued by Swanson and Berninger (1996), in the early stages of writing development orthographic coding constrains the production of written symbols. McCutchen (1996) proposed that the act of transforming the word that the writer wants to say into written symbols is so demanding for children that they minimise the use of other processes, such as planning and revising. Those children who have not yet mastered the mechanics of writing show a greater difficulty in accessing the higher order skill, with consequent worse performance (Graham & Harris, 2000). One advantage of removing the mechanical demands of transcription skills on writing is that children, with poorly developed transcription skills, usually produce texts with better quality. Further evidence comes from treatment studies. Converging evidence indicates that improving handwriting automaticity or spelling, improves text generation and quality (Graham et al., 2002).

2.5 Overall summary

The investigation on the impact of preschoolers' oral narrative skills on their later early written composing skills has been few addressed, especially when considering the impact of the level of writing automaticity in narrations. Current models of writing (Berninger & Swanson, 1994) inform about the need for the lower-level writing processes, in primis transcription skills, to become fluent to free working memory resources to devote to the higher-level processes (Graham et al., 2002; Graham & Harris, 2000). In English speaking contexts the impact of spelling on writing skills has been highlighted (Sumner, Connelly, & Barnett, 2012). In considering transparent language system, findings are lacking. Transparent language systems are characterized by an easy sound-sign correspondence; however, it has been proposed that the speech-witing conversion is not so simple and difficulties at this level can act as a limitation of narrative skills. First graders are challenged by the exercise of writing and therefore it is reasonable to propose that some children who show difficulties in the spelling skills would be impaired in their narrative skills. Furthermore, in considering the wide span of time of primary school, at our knowledge little research is avaible about the trend of improvement of both oral and narrative skills and their relationshps. The present thesis also addressed to this research issue.

2.6 General aims

The overarching aim of this thesis was to explore how a complex process as narrative competence develop across transitions (*emergent-to-formalized literacy* and *initial phase-to-more advanced phase of schooling*) and change in relation to the means of communications used (*oral* and *written channel*). Five main issues of research are presented here. Each issue of research constitutes an area of empirical study and will be presented in two individual chapters (3 and 4). More specific research questions and predictions are given in the individual chapters:

(1) To explore the general developmental trend of narrative skills, also differentiating the males from the females, in order to see what changes at the narrative level, going from oral stories to written ones (Chapter 3, Study I).

(2) To investigate the predictive power of pre-school narrative skills on written

narrative skills considering the contribution of orthographic competence (Chapter 3, Study II).

(3) To explore the developmental trend of oral and narrative competence by comparing performances of primary school children (Chapter 4, Study III).

(4) To compare oral and written narrative skills in novice writers and in more experienced writers of primary school (Chapter 4, Study IV).

(5) To examine the associations between oral and written narrative competence in novice writers and in more experienced writers of primary school children (Chapter 4, Study V).

Chapther 3 To tell a story, to write it

3.1 Introduction

The literature illustrated important connections between orthographic competence and textual writing. A rapid and correct mastery of sound-sign transposition represented the primary condition for a beginner writer to use writing coding as an instrumental and non-ambiguous medium of textual competence. Conversely, orthographic difficulties risk compromising writing development. These aspects are scarcely investigated in a longitudinal perspective and, especially considering Italian-speaking children, learning an alphabet and transparent writing system. One might wonder what happens passing through narrated stories to written stories by investigating the development of narrative skills, considering gender differences. Furthermore, it will be interesting to see what happens during this step for those children who have difficulty in spelling, in order to see if the medium of writing interferes, on the basis of the level of mastery, with the opportunity to express narrative skills in the transition from the oral to written code.

The overarching aims of this chapter were:

(1) to explore the general developmental trend of textual ability, also differentiating the males from the females, in order to see what changes at the narrative level, going from oral stories to written ones (Study I);
(2) to investigate the predictive power of pre-school narrative skills on written narrative skills taking into account the contribution of orthographic competence (Study II).

3.2 Predictions based on the literature

Based on the literature that marks the development of the narrative processes, it would be expected that the natural increase, that occurs both for oral and written narrative skill

development, remains quite stable when involving a new and different means of expression.

Further, it is conceivable that the demands of accurate spelling would have repercussions for the writing processes. It was hypothesized that a lack of automaticity in the lower level writing processes, as transcription skills (spelling), would interferes on children's written narrative competence.

3.3 Study I and Study II

3.4 Method

3.4.1 Participants

Eighty children (37 females and 43 males), randomly selected from 6 predominantly middle-class pre-schools located on the outskirts of Florence, took part in the longitudinal study. The mean age at the beginning of the study was 5.3 years (age range = 4.9 - 5.7 years; SD = .29).

In Italy formal instruction begins at the age of six, the school is largely public and ninety-five percent of children attend school. Children with certified disability were not included in this group. Parents and school authorities, as well as the children themselves, gave consent to participate in the study. According to school officials, the socioeconomic level of the participants ranged from lower-middle class (85%) to upper-middle class (15%).

3.4.2 Materials and procedure

The tasks given to the children offer a unique and ecological valid way to investigate the topic, as they do not differ from those which surround children every day and from the materials used for teaching. They were administered at a time agreed with the school respecting the requirements of privacy and informed consent requested by the Italian law

(Decree DL-196/2003). Latest version of the World Medical Association Declaration of Helsinki (2013) was consulted in respect to the ethical standards for research.

3.4.3 Research design

Aiming to explore the hypothesis described previously a longitudinal study was conducted, articulated in two phases (see, Table 1):

- in the first phase, children were attending their last year of pre-school. Their textual competence was measured through an oral story production task;
- in the second phase, children were attending their first year of primary school. Their textual competence and their early instrumental competence in writing were evaluated through a group of specific writing tasks: a written story production task and a dictation.

Table 1. Research design

(1) First phase – Kindergarten	(2) Second phase – Primary school
• Oral story production	• Written story production • Dictation task

(1) First phase (pre-school)

Oral story production task (from Pinto et al., 2009)

This task, aimed to examine children's textual ability, was administered individually out of the classroom in a well-lit place, without any kind of distraction. The instruction given to children was: "Would you tell me a story?"

Each story told was taped and a transcription was produced for the analysis conducted by two independent judges following the parameters: structure, cohesion and coherence.

To analyse story structure, we used Spinillo Galvao and Pinto's model (1994), which considers eight fundamental elements: title, conventionalised story opening, characters, setting, problem, central event, resolution and conventionalised story closing. The presence, absence or/and combinations of these elements allowed for rating of the stories into five categories, indicating varying levels of structural complexity, as shown in Table 2. Agreements between the judges, that was measured with Cohen's kappa, k = .91.

Table 2. Story structure coding (Spinillo & Pinto, 1994)

Level	Definition	Score
	No telling	0
First level - non-story	Simple description of actions without characteristic of narrative style	1
Second level - sketch story	Characteristics of narrative style, such as introduction of the setting and the main characters are present, but both problem and resolution are missing	2
Third level - incomplete story	Elementary narrative structure without a central event	3
Fourth level - essential story	Non-essential structural elements are missing	4
Fifth level - complete story	All eight elements are present, only the title is considered optional	5

To analyse levels of cohesion in stories, the categories proposed by Halliday and Hasan (1976) were used: causal cohesives, indicating cause-effect relationships among the elements in the story (e.g., then, thus, because, so, for, that, consequently, etc.) and temporal cohesives, indicating a chronological sequence in the story (e.g. Once upon a time, when, never, before, at the end, suddenly, etc.). On the basis of the number of

cohesives used, in proportion to the number of words produced, three increasing levels of cohesion were identified: absent, low, medium and high, corresponding to scores ranging from 0 to 3. Agreements between the judges: k = .89.

To assess global story coherence, the children's stories were evaluated according to coherence between sentences (adaptation from Shapiro & Hudson, 1997). The number of incoherencies, proportional to the total number of sentences, produced four score categories (ranging from 0 to 3), indicating growing levels of coherence (absent, low, medium and high). Agreements between the judges: k = .78.

Furthermore, structure, cohesion and coherence scores were added to obtain a unitary index of narrative level, called "Textual Competence".

(2) Second phase (primary school)

Written story production task

The task was administered in the classroom. The instruction given to children was: "Would you write a story?". Each story written by the children was subsequently analysed by two independent judges following the parameters: structure (agreements between the judges: k = .90), cohesion (agreements between the judges: k = .88), coherence (agreements between the judges: k = .78) and textual competence (as was done for the oral story production task).

Dictation task

All the participants were tested with a dictation with the purpose of obtaining a standard measure of their orthographic competence in a task in which it has been possible to evaluate it independently from the creative and organisational component, which is what we find instead in a narrative text. A dictation task taken from *"Batteria per la valutazione della scrittura e della correttezza ortografica nella scuola dell'obbligo"* (Tressoldi & Cornoldi, 2000) was used. The children were asked to write the story heard and subsequently we proceeded to the identification of homophone and non-homophone errors, according to the classification (Pinto et al., 2012) shown in Table 3.

Each incorrectness was given a score of 1. Considering that we wanted to count the maximum number of errors, we did not take into consideration the different error types (nomophone or non-homophone). From the sum of the error types resulted an "error rate".

Table 3. Orthographic error coding

		Error classification	
Error type	Definition	Homophone (H)	Non-homophone (NH)
Insertion	The error consists in the insertion of a single letter	Cannot occur in Italian, because all such errors would result in a letter string with a pronunciation different from the target word, but this error type is frequent in English	*Canne* for *cane*
Omission	Omission of a single letter		*Tesro* for *tesoro*
Transposition	Misordering of two adjacent letter		*Mecrato* for *mercato*
Substitution	Replacement of one grapheme with another	*Quore* for *cuore*	*Banbina* for *bambina*

3.5 Data analyses

Data analyses was performed through several steps, according to the purposes of this study. In order to examine whether children's textual competence and sub-dimensions of structure, cohesion and coherence differed across the last year of kindergarten and the first year of primary school, descriptive analyses and a series of repeated measures ANOVAs were performed. Regarding the second purpose of the study aimed at investigating the predictive nature of oral narrative skills in the total sample, the normal assumptions for the several measures of textual ability (textual competence, structure, cohesion and coherence) were checked. In that cases in which normal distribution was not verified, increase monotonic transformations were applied. Consequently, a linear bivariate regression analyses was used considering Textual Competence and in line with other longitudinal studies aimed at examining the pre-school predictors of elementary school narrative writing skills (see, Hooper, Roberts, Nelson, Zeisel, & Fannin, 2010), hierarchical regression analyses were carried out considering Structure, Cohesion and Coherence measures at T_2 as dependent variables, and the same indicators at T_1 as independent variables. Furthermore, aiming at investigating the predictive nature of oral narrative skills on written narrative skills in a sample of children with spelling difficulties, we proceeded to identify the participants with relevant orthographic difficulties, taking into account their dictation errors. The identification of these children was performed by selecting the lower 85^{th} percentile as the number of errors. These pupils were considered significantly deficient in orthographic competence. So, a group of 13 subjects was identified. Afterwards, with regard to this sub-sample, the descriptive statistics for the global score of Textual Competence and for the sub-dimensions of Structure, Cohesion and Coherence were calculated. In a second moment, a bivariate and multiple hierarchical regression analyses were carried out, similarly for the global sample, by check of the observance of normal distribution of all the metric variables considered.

3.6 Results

3.6.1 Developmental pattern of narrative skills (Study I)

First of all, descriptive statistics were calculated (table 4).

Table 4. Descriptive statistics of all dependent and independent variables: mean, standard deviation, skewness, and kurtosis

	Measure	M	SD	Skewness	Kurtosis
T1	Textual Competence	5.43	1.76	-.48	.99
	Structure	2.68	1.16	.47	-.09
	Cohesion	1.19	.55	.06	-.03
	Coherence	1.58	.83	.41	-.70
T2	Textual Competence	6.23	1.43	-.51	.27
	Structure	2.71	.88	.27	-.61
	Cohesion	1.16	.53	.12	.19
	Coherence	2.36	.90	-.89	-.89

Notes. T1: Pre-school; T2: Grade school

Considering the developmental trend of the stories, going from oral to written stories, the results show that the index obtained from the three textual scores of structure, cohesion and coherence (Textual Competence, i.e. CT), showed a significant difference when scores in kindergarten were compared to scores in primary school, specifically: (F (1,79) = 14.006, η^2 = .15, p < .001 with Bonferroni's correction; kindergarten pupils: M = 5.44, SD = 1.76, primary school pupils: M = 6.24, SD = 1.43). The results also indicated that children's coherence differed significantly (F (1,79) = 44.851, η^2 = .36, p < .001 with Bonferroni's correction) and in particular increased (kindergarten pupils: M = 1.58, SD = .84; primary school pupils: M = 2.36, SD = .90). As for the other two measures no age temporal differences emerged. The repeated measures ANOVAs were replicated separately for males and females sub-groups. No significant age temporal differences emerged for textual competence, coherence, structure and cohesion in these groups. For this reason, gender differences will not be considered in the subsequent analyses.

3.6.2 Predictive power of pre-school narrative skills on written narrative skills (Study II)

After considering the developmental trend of the stories, we moved on to investigate the predictive links between the two periods, pre-school and formalised school. Regarding the total sample of 80 subjects, the main descriptive statistics (mean, standard deviation, skewness and kurtosis) are shown in Table 4.

All the measures were normally distribuited. Moreover, *M*-value of the textual ability measures were in a central position with respect to minimum and maximum values, excluding possible floor and ceiling effects.

The linear correlation analyses showed that oral narrative competence of children attending kindergarten was significantly correlated with textual competence in primary school ($r = .29$, $p < .01$). The positive Pearson's coefficient allows us to deduce that the increase in the level of textual competence at the age of five, significantly increases textual competence at the age of six.

The first hierarchical regression analyses showed that the coherence at T_2 was predicted, in the first and unique step, by coherence ($\beta = .27$, $p < .05$) at T_1 (Table 5), while structure at T_2 was predicted only by the cohesion at T_1 ($\beta = .24$, $p < .05$) (Table 6).

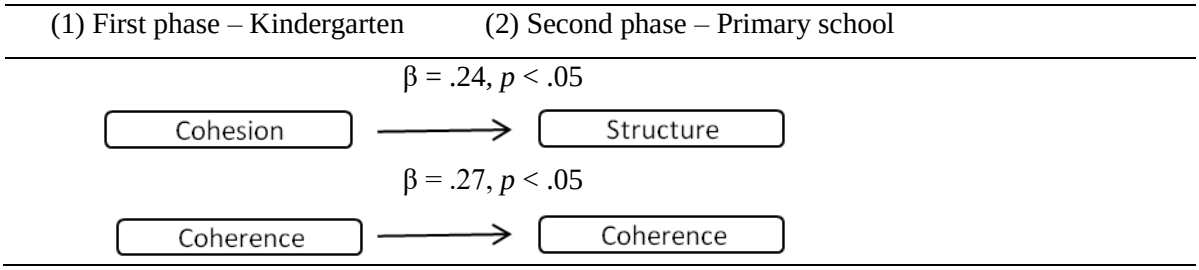
Table 5. Regression analyses on total sample, with Coherence at T2 as dependent variable and Structure, Cohesion, Coherence at T1 as independent variables: regression coefficients B, standard error SEB and standardised coefficient β.

Independent variables	B	SEB	β
Coherence	.29	.12	.27*

Notes. $R^2 = .07$; $F(1, 78) = 6.27$; *p<.05

Cohesion at T_2, differently, was not significantly predicted by any textual competence sub-measures at T_1. In summary, the predictive relationship sub-dimensions of textual competence are shown in figure 1.

Figure 1. Predictive relationships between textual competence and its sub-dimensions



Motivated by the intention to investigate whether the predictive relationships that emerged between narrative ability were independent from the learnt skills of spelling, we extrapolated a sample of children with difficulties in spelling and we proceeded to check whether the predictive links were also maintained in this case.

As regard to the sub-sample of the participants with difficulties in orthographic competence, in Table 7 the descriptive statistics of the textual competence variables (total and sub-dimensions) are reported. Even in this case all the variables were normally distributed, except for same variables underline by asterisks. For the successive linear regression analyses, this metric measure was normalised by the application of monotonic transformations.

Table 7. Descriptive statistics of all dependent and independent variables sub-sample of participants with orthographic problems (N=13): mean, standard deviation, skewness and kurtosis

	Measure	M	SD	Skewness	Kurtosis
T1	Textual Competence*	4.53	1.94	-.99	1.39
	Structure*	2.31	1.18	.36	2.06
	Cohesion	1.08	.64	-.05	.06
	Coherence*	.95	.50	-.64	1.20
T2	Textual Competence	5.46	1.80	-.52	-.65
	Structure	2.08	.64	-.05	.06
	Cohesion	1.23	.72	-.39	-.75
	Coherence*	2.15	.98	-.35	-2.11

Notes. T1= Pre-school, T2= Grade school; *= normalized measure

The results pointed out no significant predictive associations between Textual competence at T_1 and the same construct at T_2. Also, the correlation between the sub-dimensions measured at T_1 and those at T_2 were not statistically significant.

3.7 Discussion

3.7.1 Developmental trend of narrative competence (Study I)

Figure 2. Examples of stories (transcription)

	C'era una volta un'oca che stava nel mare. Un giorno venne un pesce che era tutto colorato. L'oca gli disse come si chiamava e il pesce disse che si chiamava Pesce colorato. Dopo il pesce gli disse se aveva alcuni amici e l'oca gli disse non ho nessun amico. Il pesce gli disse se poteva essere suo amico e l'oca disse di sì così furono amici e si divertirono ogni giorno insieme. *(There once was a goose that was in the sea. One day came a fish that was all colorful. The goose said what was her name and the goose said that the fish was called colored fish. After the fish told him if he had some friends and the goose told him I do not have any friends. The fish told him if he could be his friend and the goose said yes so they were friends and had fun every day together).*
C'era un gatto che si lavava le mani e c'era un uccellino che mangiava in un campo dei chicchi. Il gatto voleva mangiare l'uccellino. *(There was a cat washing his hands and there was a bird eating in a field of beans. The cat wanted to eat the bird).*	
Story told by X at five years	Story written by X at six years

Considering the narrative level, results of the analyses show it to be quite stable when scores in kindergarten are compared to those at the primary level, taking into account gender differences. When we consider the total sample, the results underline surprisingly significant differences, in particular for the indices of textual competence and coherence, which significantly increase. We considered several explanations for this finding. The literature (Damico & Ball, 2008; Shapiro & Hudson, 1991; Bamberg, 1987) shows a gradual improvement in the production of stories within the oral and written code; from

our results we can say that this improvement is also in the transition between the codes. The results, as also exemplified in the stories in the figure below, show an improvement in the ability to compose texts with good structure, cohesion and consistency, although the performance is expressed in a different medium, such as writing. Specifically, the improvement of the overall quality text is due to the improvement of consistency. This index is derived from sequences, which allow to structure the story, and from the presence of linguistic elements, that ensure continuity to the text (Shapiro & Hudson, 1991).

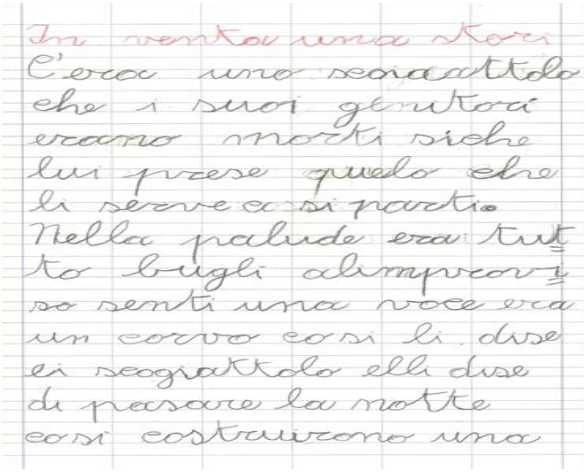
This leads us to reflect on the fact that in older children there is a more effective functioning of working memory and the possibility that writing offers to repeated access, monitoring and evaluation to the text may help children to create more coherent and better quality texts. Furthermore, the growing awareness of audience determines an increase in the strategic manipulation of linguistic devices driving the reader to follow the message (Bereiter & Scardamalia, 1987). These factors seem to determine a more comprehensive improvement of textual competence level.

Regarding the lack of significant differences for the indices of structure and cohesion, our explanation relates to the specific educational intentions of the early period of schooling. During the first year, the task required the child to acquire instrumental writing, that is the ability to encode and still not work on the text itself. The educational purposes of teaching how to write texts and to work with the properties that characterize it are not addressed. Furthermore, as regard to the use of cohesives, from the literature we know that children are able to use them progressively in a more sophisticated way (Shapiro & Hudson, 1991). This could result more appropriate and, at the same time, more parsimonious. It may be for this reason that the scores remain fairly stable.

In summary, the improvements found are mainly due to maturational factors that occur at this age and to the development of logical and causal ability in recounting events.

3.7.2 Predictive power of pre-school narrative skills on written narrative skills (Study II)

Table 8. Story told by Y at five years (transcription) and story written by Y at six years (transcription with misspellings reported)

Racconta una storia [Tell a story] – 5 year old
C'era una volta una bambina di nome [Once upon a time there was a girl named]
Cappuccetto Rosso. Andava sempre a [Little red Riding Hood. She always went to]
portare il mangiare alla sua nonna. [take food to her grandmother. Once she]
Una volta quando andava ha trovato il [went she found the wolf and the wolf]
lupo e il lupo gli disse: «Bambina cosa [said: «Child what are you doing?» and the]
fai?» e la bambina rispose: Sto cogliendo [girl replied: «I'm collecting flowers for my]
i fiori per la mia nonna». «Facciamo una [grandmother». «Let's do a thing! You child]
cosa! Te bambina passerai dalla strada più [will pass by the shortest route, and I will]
corta e io passerò dalla strada più lunga» (..) [pass across the long way» (…)]
Inventa una storia [Invent a story] – 6 year old

[There was a squirrel that his parents were dead so he took what he needs so he left. In the swamp was all oxen suddenly heard a voice was a crow so said hey squirrel and tells him to spend the night so they built a (…)]

As regard to the focus of this study, the results show that textual competence in childhood predicts the same ability considered one year later (from age five to age six). This predictability confirms our expectations: the mastery of writing allows children to preserve their narrative skills in the transition between the codes. Even the sub-dimensions of structure and coherence appear to be predicted. Summarizing, the relationship between predictor and criterion are shown before in figure 1. Cohesion in writing is generated

through the use of linguistic devices that allow to combine individual sentences to give the idea of a unitary whole (Shapiro & Hudson, 1991), and in our study this index measured at the oral level predicts 1st grade stories' structure. Pre-school ability to construct local connection among sentences permits to develop the capacity to give integrity and semantic unity to the narratives. It is not surprising that a relationship was found, as children who demonstrate greater sensitivity to the use of cohesives generally become better writers, producing well organised and structured stories.

Coherence relates to the unity in meaning conveyed by a text. It is the "logic factor" of the story and it is a property that released from the means by which it is expressed, whether this is oral or written. Then, no wonder that the result shows that children, who tell consistent stories, maintain this ability a year later, when they use writing. Instead, no predictive tie emerges for the index of structure and the index of cohesion, pointed at the age of five and six. The absence of association between structure at T_1 and T_2 can be interpreted considering the mean and standard deviation (Table 4). The scores of structure index do not improve significantly in the transition from pre-school to the period of schooling and they homogenise. In table 4 we can observe that the standard deviation is quite high considering the *M*-value of the scores and this can be linked to the fact that there is wide inter-individual variability in the expression of the narrative capacity, in line with the variability that characterises the development of language in general (Bates et al., 1995). *M*-value of pre-school stories is 2.68 and 2.71 for 1st grade stories; so, they seem to maintain around the same level which corresponds to a “sketch story” (Spinillo & Pinto, 1994). This finding is plausible, especially in Italy where the educational purpose of the first year of schooling is directed to an instrumental component, rather than towards the teaching of the organisation of texts. The structure is the embryonic ability that permits to take into account several parts of the story, but not to work on it and organise the narrative point of view. Instead, the relationship between the parties is demonstrated by consistency. Thanks to an increasing efficiency of the operation of the working memory the narrator shows him or herself increasingly able to hold the various elements of the text simultaneously present and to work on it in order to build a semantic unit.

With regard to the index of cohesion, *M*-value of pre-school stories is 1.19 and 1.16 for 1st grade stories. Our hypothesis is that cohesives do not increase in number, but in the quality of their use. So, some children will use fewer connectives, but more appropriately, instead other children will use more cohesive but less functional ties. For this reason, there is no predictive link.

Interested in investigating whether the predictive relationships that emerged between narrative ability expressed at the age of five through oral language and, afterwards, at the age of six through written language, were independent from the learnt skills of spelling. We conducted the same analyses on a sample of children with spelling difficulties. A completely different pattern emerges: the results show that the predictive links fail.

So writing, for those children who have not mastered it efficiently, becomes an obstacle. From the literature we know that lower-level skills, which do not require higher level thinking skills, are related to writing during the early stages of formal writing (Berninger & Fuller, 1992). Initially, a rapid, automatic and correct writing production may constrain the ability to transcribe ideas into a text, because a failure to master a lower-level process, such as orthographic coding, can affect the cognitive and metacognitive levels, for example in the generation of content, in the planning and organisation of the text (Swanson & Berninger, 1996; Graham, 1999).

Chapter 4 Oral and written narrative skills in Italian primary school children

4.1 Introduction

Fundamental to literacy development and learning abilities is narrative competence (e.g., Westerveld, Gillon, & Miller, 2008). One of the most significant aim of schooling is to provide the possibility to use and communicate via both oral and written language. Oral and written narrative language does not only imply similar characteristics, as the decontextualized way of thinking associated to the possibility to reason at a hypothetical level (Olson & Astington, 1990), but also differences. Differently from orality, child approaching to writing is faced with multiple tasks: learn that the written language is the transcription of the spoken language, and therefore that the written representation of a word is based on a correspondence between phonemes and graphemes; in the meantime, child need to understand that writing is not necessarily the mirror-image of the spoken language, since the correspondence between phonemes and graphemes is not always unambiguous, as conventional (Zucchermaglio, 1987). The writing process involves the application of syntactic rules to transform meaning into a linguistic message, as well as the transcription of the message using an alphabetic form. Further, writing involves grapho-motor processes (Kellog, 2008). Both the documented complexity of oral and written narrative processes and the importance of narrative ability make it essential to identify their developmental trajectories and relationships. Unfortunately, these research issues, were understudied beyond the first phase of schooling.

The purpose of this chapter is to continue to conceptualise the trend of development of oral and written narrative competence in primary school children. In this specific period considered children attend compulsory education, thus they face with the acquisition of the written code. Although the oral channel has been widely used till that point, especially in the first two years of schooling a great involvement in the exercise of the written code is required and children need to invest a lot of time and energy in the automatization of the writing process to become fluent over time.

When examining the Italian school curriculum for primary school, the The Ministry of Education, Universities and Research (MIUR, 2007; 2012) underlined that reading,

spelling, writing (comprehension and production), and speaking need to be addressed in the everydays primary school activities. These skills are a necessity for educational progress and achievement. In the reality of the everydays school practices a great emphasis is posed to the written language: as children progress, they are expected to become more independent in their writing and to develop a level of metacognitive awareness when writing. Although the curriculum gives an equal weighting to oral and written language, it has been widely shared that teachers find the implementation of the oral language challenging, because of conflicting messages regarding methodology (Kirkland, 2005). Despite this, oral language represents a useful means to evaluate learning and comprehension, for example the task of oral paraphrases is always used with children to test their comprehension of the lessons or texts.

A large body of research has analyzed children's narrative competence from the point of view of the development of structure, cohesion, coherence, and productivity (see, Pinto et al., 2018a; 2018b; Pinto, Tarchi, & Accorti Gamannossi, 2018; Pinto, Bigozzi, Vezzani, & Tarchi, 2017). As suggested by the above discussed literature, both oral and written narrative skills develop from the preschool to early school years. However, a lack of knowledge regarding their development in a wide temporal perspective ranging from early to more advanced years of primary school emerged, especially considering a transparent language system as Italian. Models of writing (Berninger & Swanson, 1994; Hayes, 2012; Hayes & Flower, 1980) and research to support these models emphasize the need to proficiently develop the lower-level transcription skills (spelling and handwriting), in order to free up working memory resources to be devoted to higher-level processes of planning the discourse structure, generating of ideas, and reviewing the written text (Berninger et al., 1992; Graham & Harris, 2000; McCutchen, 1996). One of the most useful way to gain information about the developmental of a complex writing process as the production of a narration is to focus on transition. In the context of primary school, an interesting transition is the passage from the early years, devoted to acquiring the automaticity of writing, to more advanced years, characterized by the mastery of writing. Furthermore, although researchers agree in considering oral and written language as mutual related (Shanan, 2006), few studies considered both means of expression. This empoerish our knowledge about their use in the construction of complex textus of meanings, as narratives.

The hypotheses to test for this chapter:

(1) The first aim of this study is to explore how both oral and written narrative skills develop in primary school by comparing performances of children from the early years (2nd and 3rd graders) and from more advanced years (4th and 5th graders) (Study III).

Specific questions were targeted based on the hypothesis proposed.

- Is there a developmental trend of oral and narrative competence in primary school children?
- If so, in all measures used?
- And a particularly significant trend was in the written channel?

(2) Further, the second aim of this study is to explore the differences in the overall quality of oral and written narratives in the first phase when children are young writers (2nd and 3rd graders) and in the second phase of schooling, when children are more advanced writers (4th and 5th graders).

Specific questions were targeted based on the hypothesis proposed.

- Is there a significant difference between narrative expressed by oral and written language in primary school children?
- If so, in all measures used?
- And a particularly significant difference was in the youngest participants (2nd and 3rd graders)?

(3) Finally, the third aim of this study is to explore connections between oral and written narrative competence when children are young writers (2nd and 3rd graders) and in the second phase of primary school, when children are more advanced writers (4th and 5th graders).

- Are there connections within-and-between domains (measures of oral and written narrative competence)?
- Are measures of oral narrative competence associated with written narrative competence alone and/or in association with other indicators of written narrative competence?
- If so, both in the early years (2nd and 3rd graders) and in more advanced years of primary school (4th and 5th graders)?

We chose to cover a still neglet age range, that is comprised between the second (around 7-year-old) to the fifth year (around 11-year-old) to gain knowledge about oral and written narrative competence of an important period of the educational path for a student, in covering both a phase of emergent writing abilities and a phase of more advanced writing abilities. Further, a cross-linguistic investigation of those issues is required to integrate knowledge coming from mainly English language systems. A transparent language as Italian constitues an interesting language context for the investigation of the development of structure, cohesion, coherence, and productivity in narratives.

4.2 Predictions based on the literature

Based on the literature that marks the development of the writing processes, it would be expected that increasing with level of schooling, writers are expected to increase mastery of the writing medium, so that they can free up working memory resources for the higher-level cognitive processes of planning the discourse structure, generating ideas, and reviewing the written text (Berninger et al., 1992; Graham & Harris, 2000; McCutchen, 1996). Therefore, children belonging to the fourth and fifth classes of primary school might show better written narrative performance, compared with those of children belonging to the second and third classes. This improvement should also be underpinned by the great emphasis over primary school years towards the teaching of writing aspects (see, MIUR, 2007; 2012). In parallel, orality should not follow the same improvement of the written language, since in the reality of classroom teaching activities, oral language is considered a useful means of evaluation, but less as a mean through which exercise oral narrative productions. In summary, in line with the first aim, concerning oral narrative skills, we assumed that increasing with the level of study, and thus in older children, the level of oral compositions in terms of structure, use of choesives, coherence, and productivty, both at the word and sentence level, will not increase significantly (Hypothesis 1a). Concerning written narrative skills, we assumed that increasing the level of study, and thus in older children, the level of written compositions in terms of structure, use of choesives, coherence, and productivty, both at the word and sentence level, will significantly increase (Hypothesis 1b).

Although less interested by primary school explicit teaching activities, it was predicted that oral narratives in the early years of primary school would reach higher quality ranking

if compared with written narrations in the first step of primary school (second and third classes), in being deeply rooted in preschool activities. In fact, it is conceivable that the demands of low-levels writing processes would have repercussions for the quality of narratives. Therefore, in line with second aim, we expected that younger children will show higher levels of oral narrative skills, rather than in their written narrations (Hypothesis 2a). Further, we expected that older children will show higher levels of written narrative skills, compared with their oral narrations (Hypothesis 2b).

Finally, it is conceivable that oral narrative skills, in being earlier developed, might have repercussions for the development and execution of the writing processes. Thus, an association between oral and written narrative competence was expected. Finally, in line with the third aim, we expected the presence of both within-and-between domains' relationships (oral and written narrative competence) (Hypothesis 3).

4.3 Method

4.3.1 Participants

Participants comprised 159 children, 87 boys and 60 girls, recruited as part of the present study with a cross-sectional design. As shown in table 9, participant were attending the 2nd year (n=29; males 17: females 12, M_{age} = 7.04; SD= 0.33), 3rd year (n=38; males 27: females 11, M_{age} = 8.0; SD= 0.36), 4th year (n=43; males 27: females 16, M_{age} = 8.94; SD= 0.34), and 5th year (n=37; males 16: females 21, M_{age} = 10;10; SD= 0;34). The children were recruited from primary schools in a suburban area on the outskirts of a city in Central Italy, characterized by a medium socio-economic level. Information about children's family SES were collected with a parent questionnaire.

School authorities, parents, as well as the children themselves, gave consent to participate in the study.

Table 9. Participant characteristics.

Group	Class	N	Mean age in years (SD)	Age range in years	Boys/girls
1	2nd	29	7.04(.33)	6-7	17/12
	3rd	38	8.00(.36)	7-9	27/11
2	4th	43	8.94(.34)	8-10	27/16
	5th	37	10.10(.34)	9-11	16/21

Inclusion criteria

An inclusion requirement was that children in this sample were recruited from 2nd, 3rd, 4th, and 5th classes of primary school. This class group range was selected for several reasons, the first is related to the intention of exploring the development of narrative competence across a wide span of time. Children in the first years of primary education were targeted, as they are developing important literacy-related skills, over which subsequent ones will build upon. However, the first year was excluded, because of it can be considered a specific phase, in being strongly interested by the transition from the oral to the written code.

Children in the final years of primary education were targeted, as they will soon enter secondary school, which will be a more literacy-demanding environment.

Exclusion criteria

In this research programme children with any known of special educational needs (SEN), impairments/disorders were excluded, because these additional difficulties may play a role in the performance on narrative tasks. This exclusion criterion was applied across all groups. Furthermore, from the total sample, 12 participantes didn't complete any of the tasks set, so they were furtherly excluded from the sample. In summary, the performances of 147 children were considered for the analysis.

4.3.2 Measures

Narrative production

In line with previous studies (see, i.e. Pinto et al., 2018a; 2018b; Pinto, Tarchi, & Accorti Gamannossi, 2018; Pinto, Bigozzi, Vezzani, & Tarchi, 2017), children were asked to produce a story. The task in the written form was administered collectively. The task in the oral form was administered individually, children were tested individually and in a quiet room within the school grounds. It was explained to all children that they could create a story about any topic of his/her choice, and they did not receive any indications on how many words he/she was expected to write. If at any point a child was hesitant when completing a task, they were encouraged on their performance.
This task produced several scores: structure, coherence, and cohesion (see above for more details on the scores), productivity in terms of words and sentences fluency.

Structure. Drawing from the literature on story grammar (Stein & Glenn, 1982), the structure of the participants' written productions was we analyzed according to the presence/absence of eight elements: a) title, b) conventionalized story opening, c) characters, d) setting, e) problem, f) central event, g) resolution, and h) conventionalized story closing. The system to attribute scores for structure was:

- 1st level (no storytelling): simple description or list of events, objects, or facts;
- 2nd level (sketch story): opening, setting, character/s, and conclusion or opening, sketch of the problem, and resolution;
- 3rd level (incomplete story): opening, character/s, problem, and resolution are present, but a central event is missing;
- 4th level (essential story): opening, character/s, problem, central event, and resolution are present. Non-essential structural elements, such as setting, are missing;
- 5th level (complete story): Opening, character/s, setting, problem, central event, resolution, and story closing are present. Title was considered optional.

Coherence. To analyze coherence in children's narratives, the number of incongruences were identified. An example of incongruence was: “the mouse was hiding behind a stone. A cat arrived and found the mouse eating the cheese in the kitchen”. The number of

incoherences was related to the total number of sentences produced to create one score of coherence inaccuracy.

Cohesion. To assess cohesion in children's stories, the following causal and temporal linguistic connectives were counted:
causal: così, allora, quindi, di conseguenza, a causa di ciò, con questo in mente, perché, per cui, ne segue, ne consegue, salta fuori che, a questo scopo, in quel caso, stando così le cose, non stando così le cose, perciò, sicché.
[so, then, thus, consequently, because of that, with this in mind, because, therefore, it follows that, it follows that, it turns out that, for this purpose, in that case, under the circumstances/in that case, that not being so, for this reason, and so.]
temporal: allora, poi, dopo, successivamente, proprio in quel momento, prima che, alla fine, in origine, all'inizio, precedentemente, in conclusione, alla fine, ora, improvvisamente, presto, il giorno dopo, l'anno dopo, il mese dopo, la volta dopo, nel frattempo, fino a quando, in questo momento, in primo luogo, fino ad ora, d'ora in avanti, per riassumere.
[then, after, afterwards, later, right at that moment, before (+ clause), in the end, in origin, at the beginning, beforehand, in conclusion, at the end, now, suddenly, soon, the day after, the year after, the month after, the next time, in the meantime, until, at the moment, in the first place, until now, from now on, to sum up.]
An appropriate balance was established between the number of connectives used in the stories and the total number of words. The number of temporal and causal linguistic devices was added to create the score of cohesion. Then, the total number of linguistic devices was related to the total number of words produced.

Words fluency. The number of words produced by children in their narratives was counted.

Sentence productivity. The number of sentences produced by children in their narratives was counted. A sentence was generally intended as formed by subject (implicit or explicit), verbs, and if occurs, complement.

4.3.3 Data analysis

Preliminarly to the analysis, an index of "narrative competence" was created by adding the standardized scores of structure, cohesion, and coherence as previously done in other studies (see, i.e. Pinto et al., 2009). Then, initial tests for normality were conducted on the whole data set. When this value of Skewness and Kurtosis varied from the range comprised from -1 and +1, non-parametric test were used as an alternative. In line with the first aim, to verify the effect of the level of study (group 1, composed by 2nd and 3rd graders children *vs*. group 2, composed by 4th and 5th graders children; independent variable) on children narrative competence measures in both oral and written productions (dependent variables) analyses of variance were conducted. Specifically, the Kruskall Wallis test was used in the case of non-parametric distribution and the MANCOVA in the case of parametric distribution.

In line with the second aim, to compare narrative competence performances in the oral and written form, Pairwise Comparisons (Durbin-Conover) was used in the case of non-parametric distribution and the Repeated Measures ANOVA were used in the case of parametric distribution. In line with the third aim, the associations between oral and written narrative measures in both group 1 of novice writers (2nd and 3rd graders) and group 2 of more experienced writers (4th and 5th graders) were investigated. To do that, in advance the Pearson product moment correlation coefficients (*r*) were calculated and subsequently regressional models were tested.

4.4 Results

4.4.1 Descriptive Statistics

Descriptive statistics of the whole set of variables considered in the present study are presented in the following tables 10 and 11 (means and SD). In table 10 the statistics of narrative measures (structure, cohesion, rate of incoherences, words fluency, and sentence productivity) distinguished by type of task (written narrative vs. oral narrative), age (from second to fifth grade), and class groups (1 vs. 2) were reported. In table 11, the statistics of the composite scores of oral and written narrative competence distinguished by type of

task (written narrative vs. oral narrative), classes (2^{nd}-to-5^{th} grade), and groups (1 vs. 2) were reported.

Table 10. Descriptive statistics (mean and standard deviation), distinguished by type of task (written narrative vs. oral narrative), classes (2nd-to-5th grade), and groups (1 vs. 2).

Class	Written Narratives						Oral Narratives					
	N	ST	CO	COr	WF	SP	N	ST	CO	COr	WF	SP
		M	*M*	*M*	*M*	*M*		*M*	*M*	*M*	*M*	*M*
		SD	*SD*	*SD*	*SD*	*SD*		*SD*	*SD*	*SD*	*SD*	*SD*
Total	147	2.61	4.85	9.6	107	19.9	120	2.93	5.98	8.98	136	26.4
		1.21	2.89	22.7	70.30	13		1.07	2.78	11.4	106	23.3
2	29	1.76	.055	.13	45.5	8.14	20	2.80	4.25	0.15	70.5	13.8
		.951	.035	.17	27.6	4.96		1.11	4.18	0.22	47.5	9.57
3	38	1.95	.038	.18	80.2	13.7	30	2.77	7.20	0.05	137	25.4
		1.01	.027	.39	48.1	9.00		1.22	6.85	0.05	111	19.8
4	43	3.16	.053	.041	131	24.7	39	3.03	9.33	0.09	164	29.3
		1.07	.022	.068	56.4	11.1		0.959	7.31	.07	127	22.9
5	37	3.30	.048	.053	156	29.2	31	3.06	8.55	0.09	142	31.9
		.996	.031	.099	80.4	13.3		1.06	6.25	0.09	81.1	29.9
Group												
1	67	1.87	.04	.15	65.5	11.6	50	3.00	.06	.15	110	20.8
		.98	.03	.31	43.9	8.06		1.17	.03	.31	96.2	17.4
2	80	3.23	.05	.05	142	26.8	70	3.00	.06	.09	154	30.5
		1.03	.03	.08	69.3	12.3		.999	.03	.08	109	26.1

Note. ST= structure score; CO= cohesion score ratio; COr= coherence inaccuracy score ratio; WF= word fluency; SP= sentence productivity; M=Mean; SD= standard deviation.

Table 11. Descriptive statistics (mean and standard deviation), distinguished by type of task (written narrative vs. oral narrative), classes (2nd-to-5th grade), and groups (1 vs. 2).

Grade	N	Written Language NC *M* *SD*	N	Oral Language NC *M* *SD*
2	29	1.69 .992	20	2.66 1.17
3	38	1.81 1.07	30	2.80 1.25
4	43	3.18 1.07	39	3.00 .990
5	37	3.29 1.04	31	3.03 1.09
Class group				
1	67	1.76 1.03	50	2.75 1.21
2	80	3.23 1.05	70	3.02 1.03

Note. NC= narrative competence score.

4.4.2 Results: Study III

The Study III concerned with the aim to verify the effect of the level of study (group 1 *vs.* group 2; independent variable) on children narrative competence measures in both oral and written productions (dependent variables). With this respect, analyses of variance were conducted. The existence of an increment in the indicators of narrative competence across groups (1 vs. 2) was analysed through Kruskall Wallis test (see, table 12) or MANCOVA (see, table 13). Results revealed a main effect for groups on several variables (see, tables 12 and 13).

Regarding oral narrative skills (hypothesis 1a), a significant trend was found in the production of words [$\chi^2 = 6.82$, $p < .01$; mean rank score of 110 for the 1st group (2nd and 3rd class), 154 for the 2nd group (4th and 5th class)] and sentences [$\chi^2 = 7.45$, $p < .01$; mean rank score of 20.8 for the 1st group (2nd and 3rd class), 30.5 for the 2nd group (4th and 5th class)]. No cross-groups differences were detected for the index of oral narrative competence [$F = .73$, $p = .40$; mean rank score of 2.75 for the 1st group (2nd and 3rd class), 3.02 for the 2nd group (4th and 5th class)], structure [$F = 1.05$, $p = .37$; mean rank score of 3 for the 1st group (2nd and 3rd class), 3 for the 2nd group (4th and 5th class)], cohesion [$F = 1.47$, $p = .228$; mean rank score of .06 for the 1st group (2nd and 3rd class), .06 for the 2nd group (4th and 5th class)], coherence [$\chi^2 = 1.30$, $p = .255$; mean rank score of .15 for the 1st group (2nd and 3rd class), .09 for the 2nd group (4th and 5th class)].

Regarding written narrative skills (hypothesis 1b), a significant trend was found for the index of written narrative competence [$F = 35.62$, $p < .001$; mean rank score of 1.76 for the 1st group (2nd and 3rd class), 3.23 for the 2nd group (4th and 5th class)], structure [$F = 12.31$, $p < .001$; mean rank score of 1.87 for the 1st group (2nd and 3rd class), 3.23 for the 2nd group (4th and 5th class)], coherence inaccuracy [$\chi^2 = 10.63$, $p < .01$; mean rank score of .15 for the 1st group (2nd and 3rd class), .05 for the 2nd group (4th and 5th class)], productivity both in terms of words fluency [$\chi^2 = 51.42$, $p < .001$; mean rank score of 65.5 for the 1st group (2nd and 3rd class), 142 for the 2nd group (4th and 5th class)], and sentences [$\chi^2 = 59.26$, $p < .001$; mean rank score of 11.6 for the 1st group (2nd and 3rd class), 26.8 for the 2nd group (4th and 5th class)]. Finally, no significant cross-groups differences were detected for cohesion [$\chi^2 = 2.02$, $p = .155$; mean rank score of .04 for the 1st group (2nd and 3rd class), .05 for the 2nd group (4th and 5th class)].

Table 12. Change in rates of oral and written narrative competence measures between group 1 vs. 2: Kruskall-Wallis Test.

		Kruskal-Wallis			Dwass-Steel-Critchlow-Fligner pairwise comparisons	
Measures - *Pairwise comparisons*		***χ²***	***df***	***p***	***W***	***p***
Group 1	**Group 2**					
CO_written	CO_written	2.02	1	.155	2.01	.155
COr_written	**COr_written**	10.63	1	**.001**	-4.61	**.001**
WF_written	**WF_written**	51.42	1	**< .001**	10.1	**< .001**
SP_written	**SP_written**	59.26	1	**< .001**	10.9	**< .001**
COr_oral	COr_oral	1.30	1	.255	1.61	.255
WF_oral	**WF_oral**	6.82	1	**.009**	3.69	**.009**
SP_oral	**SP_oral**	51.42	1	**< .001**	3.86	**.006**

Notes. CO= cohesion score ratio; COr= coherence inaccuracy score ratio; WF= word fluency; SP= sentence productivity

Table 13. Change in rates of oral and written narrative competence measures between group class 1 vs. 2: Results of two MANCOVA.

Model of MANCOVA	Group 1	Group 2	*Sum of squares*	*df*	*Mean square*	*F*	*p*
1	**ST_written**	**ST_written**	34.135	3	11.711	12.31	**< .001**
	ST_oral	ST_oral	3.811	3	1.270	1.05	.373
	CO_oral	**CO_oral**	.003	3	.001	1.47	.228
2	**NC_written**	**NC_written**	92.46	1	92.46	35.62	**< .001**
	NC_oral	NC_oral	2.68	1	2.68	.73	.40

Notes. ST= structure score; NC=narrative competence score; CO= cohesion score ratio
Model of Mancova 1: Wilks' Lambda value: .710, F=4.29, df1=9; df2=256; $p < .001$
Model of Mancova 2: Wilks' Lambda value: .753, F=17.7, df1=2; df2=108; $p < .001$

4.4.3 Results: Study IV

Regarding non-parametric analyses, a Pairwise Comparisons (Durbin-Conover) was conducted in the first group of children. The results of demonstrated a significant interaction between measures of narrative competence considered and type of task (oral vs. written), $\chi_F^2(7) = 259$, $p = < .001$ (see, table 14).

Specifically, children belonging to the first group (2nd and 3rd graders) produced higher level of linguistic devices (temporal and causal) in the oral narrative production ($M = .06$), than in their written narratives ($M = .04$) ($\chi^2=259$; $p < .05$) and they showed significantly lower incoherences in the oral form ($M = .18$) than in their written texts ($M = .09$) ($\chi^2=259$; $p < .05$). Instead, no significant differences were detected for the indicators of words fluency and sentence productivity.

Furthermore, regarding parametric analyses, the results of the Repeated Measures ANOVA demonstrated a significant interaction between structure with the medium (oral vs. written). In particular, highel level of structure ($F=19.3$; $p = < .001$) were reached in the oral productions. No significant differences were showed for narrative competence ($F=.04$; $p = .84$) (see, table 15).

Table 14. Change in rates between type of task (oral vs. written) in the Group 1: Pairwise Comparisons (Durbin-Conover).

				Pairwise Comparisons (Durbin-Conover)		*Friedman*		
Written measures	***Median***		**Oral Measures**	***Median***	***Statistic***	***p***	χ^2	***df***	***p***
CO_written	.039	-	CO_oral	.057	2.22	**.027**			
COr_written	.100	-	COr_oral	.042	2.57	**.011**	259	7	**< .001**
WF_written	66	-	WF_oral	99	1.11	.267			
SP_written	11	-	SP_oral	19	1.93	.055			

Notes. CO= cohesion score ratio; COr= coherence inaccuracy score ratio; WF= word fluency; SP= sentence productivity.

Table 15. Change in rates of structure between type of task (oral vs. written) in the Group 1: Repeated Measures ANOVA.

			Within Subjects Effects						
Written Measures		**Oral Measures**	***Sum of Squares***	***df***	***Mean Square***	***F***	***p***	***η²***	***partial η²***
ST_written	**-**	**ST_oral**	9.12	1	9.12	19.3	**< .001**	.31	.31
NC_written	-	NC_oral	.10	1	.10	.04	.84	.00	.00

Notes. ST= structure score; NC= narrative competence score

Similarly, the same analyses were conducted in the second group (4^{th} and 5^{th} graders). Regarding non-parametric analyses, a Pairwise Comparisons (Durbin-Conover) was conducted in the second group of children. The results of demonstrated a significant interaction between measures of narrative competence and type of task (oral vs. written), $\chi_F^2(7) = 413$, $p = < .001$. Specifically, children belonging to the second group produced higher level of linguistic devices (temporal and causal) in the oral form ($M = .06$) than in their written narratives ($M = .05$) (χ^2=413; $p < .01$) and they showed significantly higher level of incoherences in the oral form ($M = .09$) than in their written texts ($M = .05$) (χ^2=413; $p < .001$). Instead, no significant differences were detected for the indicators of words fluency and sentence productivity (see, table 16). Furthermore, regarding parametric analyses, the results of the Repeated Measures ANOVA demonstrated no significant interaction between structure and narrative competence with the medium (oral vs. written) (see, table 17).

Table 16. Change in rates between type of task (oral vs. written) in the Group 2: Pairwise Comparisons (Durbin-Conover)

					Pairwise Comparisons (Durbin-Conover)		*Friedman*		
Written Measures	***Median***		**Oral Measures**	***Median***	***Statistic***	***p***	χ^2	***df***	***p***
CO_written	.047	-	**CO_oral**	.062	3.30	**.001**			
COr_written	.01	-	**COr_oral**	.09	6.55	**< .001**	413	7	**< .001**
WF_written	137.00	-	WF_oral	117.5	.91	.364			
SP_written	23.5	-	SP_oral	23.5	.33	.738			

Notes. CO= cohesion score ratio; COr= coherence inaccuracy score ratio; WF= word fluency; SP= sentence productivity

Table 17. Change in rates of structure between type of task (oral vs. written) in the Group 2: Repeated Measures ANOVA

			Within Subjects Effects						
Written Measures		**Oral Measures**	***Sum of Squares***	***df***	***Mean Square***	***F***	***p***	***η²***	***partial η²***
ST_written	-	ST_oral	.73	1	.73	1.02	.316	.015	.015
NC_written	-	NC_oral	.22	1	.22	.08	.78	.00	.00

Notes. ST= structure score; NC= narrative competence score

4.4.4 Results: Study V

In Study V the associations between oral and written narrative measures in both group 1 of novice writers (2nd and 3rd graders) and group 2 of more experienced writers (4th and 5th graders) were investigated. Some intercorrelations among analysed narrative variables were strong and statistically significant ($p < .001$) (table 18). Regarding group 1, correlation intra-domain of written narrative competence emerged: narrative competence was positively correlated with structure ($p < .001$), cohesion ($p < .05$), words fluency ($p < .001$), and sentence productivity ($p < .001$). Narrative structure was positively correlated with cohesion ($p < .05$), words fluency ($p < .001$), and sentence productivity ($p < .001$). Rate of incoherences was positively correlated with words fluency ($p < .001$), and sentence productivity ($p < .01$). Words fluency was positively correlated with sentence productivity ($p < .001$). Furthermore, correlation intra-domain of oral narrative competence emerged: narrative competence was positively correlated with structure ($p < .001$), words fluency ($p < .001$), and sentence productivity ($p < .01$). Narrative structure was positively correlated with words fluency ($p < .001$) and sentence productivity ($p < .01$). Finally, correlation inter-domains of oral and written narrative competence emerged: written narrative competence was positively correlated with oral narrative competence ($p < .001$) and oral structure ($p < .001$). Written narrative structure was positively correlated with oral narrative competence ($p < .001$) and oral structure ($p < .001$). Written cohesion was positively correlated with oral narrative competence ($p < .01$), oral structure ($p < .01$), and oral cohesion ($p < .01$). Written words fluency was positively correlated with oral narrative competence ($p < .01$), oral structure ($p < .01$), and oral words fluency ($p < .05$). Written sentence productivity was positively correlated with oral narrative competence ($p < .05$), oral structure ($p < .05$), oral words fluency ($p < .05$), and oral sentence productivity ($p < .05$) (see, table 18). Regarding group 2, correlation intra-domain of written narrative competence emerged (table 19): narrative competence was positively correlated with structure ($p < .001$), words fluency ($p < .001$), and sentence productivity ($p < .001$). Narrative structure was positively correlated with words fluency ($p < .001$), and sentence productivity ($p < .001$). Cohesion was negatively correlated with words fluency ($p < .05$). Words fluency was positively correlated with sentence productivity ($p < .001$).

Furthermore, correlation intra-domain of oral narrative competence emerged: narrative competence was positively correlated with structure ($p < .001$), words fluency ($p < .001$), and

sentence productivity ($p < .01$). Further, narrative competence was inversely correlated with rate of incoherencies ($p < .001$). Narrative structure was positively correlated with words fluency ($p < .001$) and sentence productivity ($p < .001$). Further, narrative competence was inversely correlated with rate of incoherencies ($p < .001$). cohesion was inversely correlated with words fluency ($p < .01$) and sentence productivity ($p < .01$). words fluency was positively correlated with sentence productivity ($p < .001$).

Finally, some correlation inter-domains of oral and written narrative competence emerged: written narrative competence was positively correlated with oral narrative competence ($p < .05$) and oral structure ($p < .05$) (see, table 19).

Table 18. Correlation coefficients (Pearson's *r*) between narrative measures among Group 1

	NC_wr	ST_wr	CO_wr	COr_wr	WF_wr	SP_wr	NC_or	ST_or	CO_or	COr_or	WF_or	SP_or
NC_wr	—	**.95 *****	**.28 ***	-.04	**.49 *****	**.49 *****	**.55 *****	**.55 *****	.13	-.09	.19	.23
ST_wr		—	**.27 ***	.17	**.58 *****	**.52 *****	**.62 *****	**.62 *****	.14	-.07	.23	.26
CO_wr			—	.03	-.02	.00	**.32 ***	**.31 ***	**.33 ***	-.05	.18	.18
COr_wr				—	**.39 *****	**.34 ****	.29	.30	.01	-.07	.22	.14
WF_wr					—	**.92 *****	**.44 ****	**.45 ****	.02	-.11	**.33 ***	.25
SP_wr						—	**.32 ***	**.33 ***	-.03	-.05	**.38 ***	**.35 ***
NC_or							—	**.99 *****	.12	-.19	**.47 *****	**.44 ****
ST_or								—	.10	-.09	**.48 *****	**.44 ****
CO_or									—	-.05	-.12	-.15
COr_or										—	.13	.01
WF_or											—	**.92 *****

SP_wr	—

Note. *p < .05; **p < .001; ***p< .0001

Table 19. Correlation coefficients (Pearson's *r*) between narrative measures among Group 2

	NC_wr	ST_wr	CO_wr	COr_wr	WF_wr	SP_wr	NC_or	ST_or	CO_or	COr_or	WF_or	SP_or
NC_wr	—	**.997 *****	.152	-.119	**.479 *****	**.589 *****	.237	.236	.005	-.127	.144	.155
ST_wr		—	.142	-.057	**.498 *****	**.594 *****	**.254 ***	**.254 ***	-.004	-.116	.147	.159
CO_wr			—	.040	**-.275 ***	-.003	-.027	-.040	.143	-.111	-.127	-.133
COr_wr				—	.209	.060	.137	.148	.091	.179	-.015	.038
WF_wr					—	**.763 *****	.134	.147	.033	.134	.108	.036
SP_wr						—	.117	.120	.106	.032	.140	.110
NC_or							—	**.997 *****	-.078	**-.398 *****	**.496 *****	**.520 *****
ST_or								—	-.115	**-.328 ****	**.519 *****	**.536 *****
CO_or									—	-.163	**-.383 ****	**-.326 ****
COr_or										—	.101	.014
WF_or											—	**.939 *****

Table 19. Correlation coefficients (Pearson's *r*) between narrative measures among Group 2

	NC_wr	ST_wr	CO_wr	COr_wr	WF_wr	SP_wr	NC_or	ST_or	CO_or	COr_or	WF_or	SP_or
SP_wr												—

Then, to assess the validity of the third hypothesis namely that oral narrative skills were associated with written narrative skills, a regression model was carried out. Specifically, written narrative skills measures were considered as a response variable and oral narrative skills as explanatory variables in models 1; oral as well written narrative skills as explanatory variables in models 2. In particular, it was hypothesized that oral narrative skills significantly predict performance on written narratives based on a theoretical background, according to which oral skills develops earlier than written one's. As a first step, the predictive impact of oral narrative skills was therefore evaluated. As a second step, the predictive impact of both oral and written narrative measures were evaluated. More specifically, regression models were tested separately on both groups (Group 1 and Group 2).

The first phase of analyses tested relationships in Group 1. In the first regression model written structure was entered as a response variable. Two different models were tested, the first one with oral narrative skills as explanatory variables, the second one's with oral and written narrative skills as explanatory variables. Collinearity between variables was resolved by entering only one of them. According to the Model 1, oral narrative measures increased ($p < .001$) the structure of a written text, as well as the other measures of written narrative quality. Model 1 explained for 63.3% of the variance in written structure (adjusted R2 = .338, $F(4, 38) = 6.35$, $p < .001$). Model 2 explained for 69.1% of the variance in written structure (adjusted R2 = .37, $F(7,35) = 4.57$, $p < .01$). The indexes of the model comparison and coefficients were presented in the tables 20 and 21.

Table 20. Regression analyses on Group 1, with written structure as dependent variable: Model 1 Coefficients

			95% Confidence Interval				
Variable	***β***	***SE***	***Lower***	***Upper***	***t***	***p***	***Stand. Estimate***
ST_or	**.55**	**.12**	**.30**	**.80**	**4.45**	**< .001**	**.66**
CO_or	1.97	4.00	-6.1	10.08	.49	.62	.06
COr_or*	.04	.18	-.32	.41	.25	.80	.03
WF_or*	-.18	.34	-.86	.50	-.54	.59	-.08

Note. *=normalized variable

Table 21. Regression analyses on Group 1, with written structure as dependent variable: Model 2 Coefficients

Variable	*β*	*SE*	95% Confidence Interval		*t*	*p*	*Stand. Estimate*
			Lower	*Upper*			
ST_or	**.46**	**.13**	**.19**	**.73**	**3.44**	**.00**	**.55**
CO_or	-.42	4.13	-8.80	7.95	-.10	.92	-.01
COr_or*	.06	.17	-.29	.42	.36	.72	.04
WF_or*	-.29	.33	-.97	.39	-.87	.39	-.13
CO_wr*	1.69	.96	-.26	3.64	1.76	.09	.24
CO_wr*	-.07	.08	-.24	.10	-.83	.41	-.10
WF_wr*	.08	.06	-.03	.20	1.50	.14	.21

Note. *=normalized variable

In the second regression model tested, written cohesion was entered as a response variable in group 1. Two different models were tested, the first one with oral narrative skills as explanatory variables, the second one's with oral and written narrative skills as explanatory variables. Collinearity between variables was resolved by entering only one of them. According to the Model 1, only oral narrative measures didn't predict (p = .08) the cohesivness of a written text, but both oral and written measures of narrative quality did. In fact, model 2 explained for 54.8% of the variance in written structure (adjusted R2 = .18, F(6, 36) = 2.58, p < .05). The indexes of the model comparison and coefficients were presented in table 22.

Table 22. Regression analyses on Group 1, with written cohesion as dependent variable: Model 2 Coefficients.

			95% Confidence Interval				
Variable	***β***	***SE***	***Lower***	***Upper***	***t***	***p***	***Stand. Estimate***
SP_or*	.03	.02	-.02	.08	1.40	.18	.21
COr_or*	-.00	.03	-.06	.05	-.12	.91	-.02
CO_or	**1.32**	**.65**	**.01**	**2.63**	**2.04**	**.04**	**.29**
ST_wr	**.05**	**.02**	**.00**	**.10**	**2.43**	**.02**	**.37**
COr_wr*	-2.34	.01	-.03	.03	-.02	.99	-.00
SP_wr	-.00	.00	-.01	8.42	-1.7	.09	-.27

Note. *=normalized variable

In the third regression model written rate of incoherence was entered as a response variable in group 1. Two different models were tested, the first one with oral narrative skills as explanatory variables, the second one's with oral and written narrative skills as explanatory variables. Collinearity between variables was resolved by entering only one of them. Both models were not significant. The indexes were presented in table 23.

Table 23. Regression analyses on Group 1, with rate of written incoherencies as dependent variable: Model Fit Measures

							Overall Model Test			
Model	***R***	***R²***	***Adjusted R²***	***AIC***	***BIC***	***RMSE***	***F***	***df1***	***df2***	***p***
1	.32	.10	.00	166	176	1.44	1.05	4	38	.39
2	.39	.15	-.02	169	185	1.40	.87	7	35	.54

In the fourth regression model written words fluency was entered as a response variable in group 1. Two different models were tested, the first one with oral narrative skills as

explanatory variables, the second one's with oral and written narrative skills as explanatory variables. Collinearity between variables was resolved by entering only one of them. According to the Model 1, only oral narrative measures didn't predict (p = .05) the rate of incoherence of a written text, but both oral and written measures of narrative quality did. In fact, model 2 explained for 91.9% of the variance in written structure (adjusted R2 = .81, F(8,34) = 23.05, p < .001). The indexes of the model comparison and coefficients were presented in table 24.

Table 24. Regression analyses on Group 1, with written words fluency as dependent variable: Model 2 Coefficients

			95% Confidence Interval				
Variable	***β***	***SE***	***Lower***	***Upper***	***t***	***p***	***Stand. Estimate***
ST_or	**.43**	**.21**	**.01**	**.86**	**2.07**	**.04**	**.20**
CO_or	-.18	5.84	-12.05	11.69	-.031	.97	-.00
COr_or*	-.12	.24	-.61	.37	-.48	.63	-.03
SP_or*	**-.46**	**.23**	**-.94**	**.01**	**-1.99**	**.04**	**-.16**
ST_wr	.05	.24	-.43	.53	.21	.84	.02
CO_wr*	.38	1.42	-2.52	3.28	.27	.79	.02
COr_wr*	.06	.12	-.18	.30	0.49	.62	.04
SP_wr	**.28**	**.02**	**.23**	**.33**	**10.91**	**< .001**	**.86**

Note. *=normalized variable

In the fifth regression model written sentence productivity was entered as a response variable in group 1. Two different models were tested, the first one with oral narrative skills as

explanatory variables, the second one's with oral and written narrative skills as explanatory variables. Collinearity between variables was resolved by entering only one of them. According to the Model 1, only oral narrative measures didn't predict (p = .11) the sentence productivity of a written text, but both oral and written measures of narrative quality did. In fact, model 2 explained for 90.8% of the variance in sentence productivity (adjusted R2 = 0.78, F(8,34) = 19.98, p < .001). The indexes of the model comparison and coefficients were presented in table 25.

Table 25. Regression analyses on Group 1, with written sentence productivity as dependent variable: Model 2 Coefficients

			95% Confidence Interval				
Variable	***β***	***SE***	***Lower***	***Upper***	***t***	***p***	***Stand. Estimate***
ST_or	-1.06	.71	-2.49	.38	-1.49	.14	-.16
CO_or	.13	18.90	-38.28	38.55	.01	.99	5.54
COr_or*	.03	.80	-1.60	1.66	.04	.97	.00
WF_or*	2.98	1.55	-.17	6.13	1.92	.06	.17
ST_wr	.47	.77	-1.09	2.05	.61	.54	.06
CO_wr*	-4.42	4.59	-13.75	4.91	-.96	.34	-.08
COr_wr*	-.02	.39	-.82	.78	-.05	.96	-.00
WF_wr*	**2.71**	**.27**	**2.17**	**3.25**	**10.20**	**< .001**	**.89**

Note. *=normalized variable

The second phase of analyses tested relationships in Group 2. In the first regression model written structure was entered as a response variable. Two different models were tested, the

first one with oral narrative skills as explanatory variables, the second one's with oral and written narrative skills as explanatory variables. Collinearity between variables was resolved by entering only one of them. According to the Model 1, only oral narrative measures didn't predict (p = .35) the structure of a written text, but both oral and written measures of narrative quality did. In fact, model 2 explained for 59.8% of the variance in written structure (adjusted R2 = .28, F(7,60) = 4.76, p < .001). The indexes of the model comparison and coefficients were presented in table 26.

Table 26. Regression analyses on Group 1, with written structure as dependent variable: Model 2 Coefficients

			95% Confidence Interval				
Variable	***β***	***SE***	***Lower***	***Upper***	***t***	***p***	***Stand. Estimate***
ST_or	.20	.14	-.07	.47	1.47	.15	.21
CO_or	-.75	4.28	-9.31	7.79	-.18	.86	-.02
COr_or	-.05	.19	-.44	.34	-.25	.80	-.03
WF_or*	.03	.43	-.84	.89	.06	.95	.00
CO_wr*	**3.13**	**1.02**	**1.08**	**5.17**	**3.06**	**.00**	**.33**
COr_wr*	**-.21**	**.09**	**-.39**	**-.02**	**-2.25**	**.03**	**-.25**

			95% Confidence Interval				
Variable	***β***	***SE***	***Lower***	***Upper***	***t***	***p***	***Stand. Estimate***
WF_wr*	**.18**	**.04**	**.09**	**.25**	**4.52**	**< .001**	**.49**

In the second regression model written cohesivness was entered as a response variable in Group 2. Two different models were tested, the first one with oral narrative skills as explanatory variables, the second one's with oral and written narrative skills as explanatory variables. Collinearity between variables was resolved by entering only one of them. Both models were not significant. The indexes were presented in table 27.

Table 27. Regression analyses on Group 1, with written cohesivness as dependent variable: Coefficients of Model

							Overall Model Test		
Model	***R***	***R²***	***Adjusted R²***	***AIC***	***BIC***	***RMSE***	***F***	***df1***	***df2***	***p***
1	.20	.04	-.00	-113	-101.6	.09	.87	3	64	.46
2	.35	.12	.03	-113	-95.1	.09	1.41	6	61	.23

In the third regression model written rate of incoherence was entered as a response variable. Two different models were tested, the first one with oral narrative skills as explanatory variables, the second one's with oral and written narrative skills as explanatory variables. Collinearity between variables was resolved by entering only one of them. Both models were not significant. The indexes were presented in table 28.

Table 28. Regression analyses on Group 1, with written rate of incoherence as dependent variable: Coefficients of Model

							Overall Model Test			
Model	***R***	***R²***	***Adjusted R²***	***AIC***	***BIC***	***RMSE***	***F***	***df1***	***df2***	***p***
1	.21	.04	2.68	221	232	1.14	1.01	3	64	.39
2	.39	.15	.06	219	237	1.08	1.79	6	61	.12

In the fourth regression model written words fluency was entered as a response variable in Group 2. Two different models were tested, the first one with oral narrative skills as explanatory variables, the second one's with oral and written narrative skills as explanatory variables. Collinearity between variables was resolved by entering only one of them. According to the Model 1, only oral narrative measures didn't predict (p = .30) words fluency, but both oral and written measures of narrative quality did. In fact, model 2 explained for 82.7% of the variance in written structure (adjusted R2 = .64, F(8,59) = 15.96, p < .001). The indexes of the model comparison and coefficients were presented in table 29.

Table 29. Regression analyses on Group 1, with written words fluency as dependent variable: Model 2 Coefficients

			95% Confidence Interval				
Variable	***β***	***SE***	***Lower***	***Upper***	***t***	***p***	***Stand. Estimate***
ST_or	.33	.27	-.21	.88	1.23	.22	.13
CO_or	-4.31	8.43	-21.17	12.55	-.51	.61	-.04
COr_or*	.50	.37	-.25	1.26	1.34	.18	.11
SP_or*	-.62	.35	-1.33	.09	-1.75	.08	-.17
ST_wr	.38	.26	-.13	.89	1.48	.14	.14
CO_wr*	**-5.88**	**2.08**	**-10.03**	**-1.73**	**-2.83**	**.00**	**-.22**

			95% Confidence Interval				
Variable	***β***	***SE***	***Lower***	***Upper***	***t***	***p***	***Stand. Estimate***
COr_wr*	.30	.18	-.07	.67	1.62	.11	.13
SP_wr	**.16**	**.019**	**.12**	**.19**	**7.93**	**< .001**	**.69**

Note. *=normalized variable

In the fifth regression model written sentence productivity was entered as a response variable in Group 2. Two different models were tested, the first one with oral narrative skills as explanatory variables, the second one's with oral and written narrative skills as explanatory variables. Collinearity between variables was resolved by entering only one of them. According to the Model 1, only oral narrative measures didn't predict (p = .49) sentence productivity, but both oral and written measures of narrative quality did. In fact, model 2 explained for 81.1% of the variance in written structure (adjusted R2 = .61, F(8,59) = 14.18, p < .001). The indexes of the model comparison and coefficients were presented in table 30.

Table 30. Regression analyses on Group 1, with written sentence productivity as dependent variable: Model 2 Coefficients

			95% Confidence Interval				
Variable	***β***	***SE***	***Lower***	***Upper***	***t***	***p***	***Stand. Estimate***
ST_or	-1.34	1.26	-3.88	1.18	-1.06	.29	-.12
CO_or	47.58	38.83	-30.11	125.27	1.23	.22	.10
COr_or*	-1.31	1.78	-4.86	2.25	-.73	.46	-.07
WF_or*	5.82	3.94	-2.06	13.71	1.48	.14	.15
ST_wr	2.13	1.17	-.22	4.47	1.81	.07	.17

			95% Confidence Interval				
Variable	***β***	***SE***	***Lower***	***Upper***	***t***	***p***	***Stand. Estimate***
CO_wr*	10.72	9.96	-9.21	30.66	1.08	.29	.09
COr_wr*	-.23	.89	-1.97	1.50	-.27	.79	-.02
WF_wr*	**3.19**	**0.41**	**2.37**	**4.02**	**7.74**	**< .001**	.73

Note. *=normalized variable

4.5 Discussion

The aim of this study was to explore the development of both oral and written narrative skills in 2nd-to-5th grade Italian primary school children. A second goal was to explore the differences in the levels of narratives' quality between oral and written narratives.

Regarding the developmental tendency of oral narrative skills, the comparison between performances of children belonging to early years and performances of children belonging to more advanced years of primary school demonstrated significant differences for a linguistic indicator. In fact, increasing with the level of study oral narrative productions showed an increased number of sentences (measure of sentence productivity). Instead, no significant differences were detected for structure, linguistic devices (cohesion), number of word (word fluency) and coherence. This result could be reasoned by referring to the spread lacking attention of the everyday classroom activity to the teaching and practice of oral language skills (Kirkland, 2005). Alongside with the natural maturative development of cognitive and linguistic development which underpin the development of complex form of communication through oral language, the major part of time end effort at school addressed to the practice of oral ability is tacit and implicit in nature.

Regarding written narrative skills, as expected, children belonging to the more advanced years of primary school (4th and 5th graders) tended to produce well-performed stories. From the point of view of structure, narratives of children attending the 4th anf 5th grades of primary school set around the third level, which corresponds to an incomplete narrative story, characterized by several main aspects of a narration, such as opening, character/s, problem, and resolution, but lacking in providing a complete presentation of the central event that bring to resolution (see, Pinto et al., 2016). However, it should to be noticed that the analysis of the standard deviation scores shows a great individual variability in children's written narrative competence performances. The analysis of the standard deviation scores showed that their scores ranged from the second (sketch story) to the fourth (essential story) level. In contrast, narratives of children attending the 2nd anf 3rd grades of primary school set around the second level of sketch story, which includes a setting and the main character. Again, the analysis of the standard deviation scores showed that their scores ranged from the first (non-story) to the third (incomplete story) level. As suggested by literature (Appleby, 1978; Hughes et al., 1997), the development of children correspond to the development of their narrative competence, as their stories increase in their plot's complexity. Initially, children produce stories that group pieces of information presented randomly and without the use of chaining

or centering. Progressively, children's narrative productions appear to be more structured and meaningful, as formed by an initial part, a problem, events that conduct to resolution, and conclusions. As the result of the present study suggested, this improvement occurs in parallel with the improvement of children's use of chaining devices, such as cohesives. From the point of view of cohesion, increasing with age, the results of the present study didn't show a significant increment of the number of temporal and causal cohesives. Cohesives devices are local elements that tie sentences together to express the plot and to connect linguistic elements (Hughes et al., 1997). As suggested by literature, the production of cohesive and complete story narratives requires sophisticated linguistic capabilities and the cognitive demands challenging children when creating a cohesive narrative, requiring the narrator to monitor the story's organization while presenting the causal and temporal sequence of events. Studies in literature suggested that children with language impairments produce stories that are less cohesive (Liles, 1985), fewer causal connections between events (Hayward, Gillam & Lien, 2007). However, on the other part an improvement of cohesion cannot be always overlapping with an increment of linguistic devices. Conversely, children can improve in their accuracy by selectively choosing the cohesive to use and thus they might become more parsimonious. Furthermore, significantly differences in the score of incoherences was found increasing with age, in particular automaticity in writing enable students to write qualitatively adequate stories featured by a coherent exposition of events and characters. From the point of view of productivity, both words and sentences fluency increased. This led us to think that also linguistic complexity increased. Children's increased avaibility of words in their mental lexicon permitted them to produce longer and more articulated stories. Increasing with age and, at the same time, increasing in the mastering of the medium of writing, the gained automaticity in the lower-level of writing underpinned the enrichement of children's vocabulary and the ability to combine words in meaningful way to produce sentences. This could be challenging. Children could be exposed to the risk to commit incoherences, produce lacks in narrations resulting in communicatively scarce products. However, the gained automaticity of writing free up resources from their memory store to be destined to high level processes. These last complex processes combined with improved esecutive and memory functions could save children to lack the conduction of narrations, resulting in more incoherences.

A narrative codying system able to integrate both macrostructural (such as structure) and microstructural (cuch as cohesive devices) elements provides a meaningful comprehension of

narrative development. Results suggested that more experienced writers (4th and 5th graders), featured by improved language, cognitive, and metacognitive processing (Berninger et al. 1992; Graham & Harris, 2000; McCutchen, 1996), showed the abilities to plan, organize, and generate a structured, goal-directed narrative, alongside with tha understanding of the meaning of events, while simultaneously monitoring the construction and exposition of the story.

Regarding the second aim, the comparison of oral and written narratives in the first group of primary school children (2nd and 3rd graders) showed a significant difference in favour of oral narratives. That is, in oral narratives children obtained significantly higher scores for the total score of narrative competence, as well as for the indicators of structure and cohesion, compared with scores in their written narratives. Furthermore, the risk to commit incoherences was lower in the oral performances. As showed by literature (Tolchinsky, 2009; Pinto et al., 2015), when children enter to formalized education bring with them a wealth of knowledge and skills cultivated during the emergent literacy period, such as narrative competence which is deeply rooted in oral language. However, in this first period of schooling children are challenged by the written code, then it is reasonable that their ability to produce structure stories is better in the oral language than written language. If the use of written language is something quite challenging at that age, the use of oral language permits to free up resources from the difficulties of low-level processes, as transcription, to be destined to high-level processing, as generating ideas (Hayes, 2012). This can be interpreted also in the light of results emerged for the measure of incoherences which appeared to be more present in the written form. Furthermore, results of the present study showed a higher level in the use of linguistic devices in the oral form. At the age considered, a poor use of cohesive can face the coherence of a story. It is not surprisingly that in written narration where cohesives are less present, more inchoerences appears. Finally, in line with literature (Berninger, 2000; Hayes, 2012), novice writers, in being engaged in the automatization of the process, showed higher scores of the index of narrative competence in their oral production. Instead, no significant differences were detected for words fluency and sentence productivity.

On the other part, the comparison of oral and written narratives in the second group of more advanced primary school children (4th and 5th graders) showed a significant difference for the indicators of cohesion and rates of incoherences. Specifically, in oral narratives children produced a significantly higher number of linguistic devices than in their written narratives. At that age, the need to use a lot of linguistic devices might segnalize a difficulty in choosing

in a more parsimonious way causal and temporal devices, maybe due to the decayed familiarity in the use of oral language to produce narratives over primary schools' years. This can expose children to lacking in the mastery of a different mean of communication with respect to writing. In fact, differently from the written narration that can be read and re-read, narrations constructed with the mean of oral language strongly relies on sustained attention and working memory (Duinmeijer, Jong, & Scheper, 2012). The wide use of linguistic devices can segnalize a difficulty in maintain the conduction of the story and the need to signalize the passage of events with cohesives, rather that with more complex structure of sentences. In line with this, more incoherences were showed in the oral form, rather than in the witten one's. Instead, no significant differences were detected for structure, words fluency and sentence productivity.

Oral narratives emerged as significant predictor of written narrative skills in the transition between emergent to formalized literacy (Pinto et al., 2009; Pinto et al., 2016). However, oral skills are not unavoidably a guarantee of good story quality in written language, as discussed above (see, i.e. Hayes, 2012). Several regression models were examined, with written narrative competence measures as response variables and both oral narrative competence measures as well as both oral and written narrative measures as explanatory variables. These models evidenced that oral narrative competence measures show varying associations to written narrative competence measures. In fact, significant within-and-between domains of oral and written narrative competence emerged.

In particular, oral and written narrative competence measures were found to be significantly associated in group 1 more extensively than in group 2. For example, oral narrative structure was significantly associated with written structure and words fluency in written texts.

If narration is conceived as a complex linguistic- and pragmatic based whole, narrative structure should be seen in relation to linguistic measures. From that point of view, the ability to produce well structured oral narratives led to produce well structured written stories, featured by the presence of several and different words. Then, oral cohesion was significantly associated with written cohesion and structure, and oral sentence productivity with written words fluency. This finding is plausible, considering that the more different word forms there are, the more meaning there is also likely to be. The index of sentence productivity may capture both general language proficiency (productivity) and syntactic/semantic skills. In this sense, preliminary results of the present study showed that oral language plays a pivotal role of written language in the first stage of primary school, even if further empirical evidences

are necessary to confirm results. Regarding within-domains relationships among written narrative competence of Group 1 (2nd and 3rd graders), significant relationships were found only for linguistic indeces, as the production of words was significantly associated with the production of sentences.

Turning to the relationships emerged in Group 2 (4th and 5th graders), only within-domains relationships among written narrative competence's measures emerged. Cohesion emerged as significantly associated with narrative structure and words fluency. Words fluency was significantly associated with structure and sentence productivity, which in turn was associated with words fluency. Finally, the rate of incoherences emerged as significantly associated, but inversely.

The independence between oral narrative competence measures and written narrative competence measures gives cues of reflection about a possible phase of discontinuity between the two means of expression, which overlaps with the end of primary school, when children are consolidating their writing abilities.

The network of relations shown by the models in its whole suggested that emergent written narrative competence can be view as associated and driven by orality, from the emergent literacy period as previous showed, till the beginning of formal literacy. Subsequently, the narrative competence appeared to achieve a quite independent status, which led them disjoined. It would be possible that in subsequent phase of schooling (after primary school) they might show a re-connection. More precisely, it would be possible, that a pivotal role of written narrative competence might emerge with respect oral narrative skills. In other words, the acquisition of a specific format, thanks to advanced text writing abilities, would be functional to the use the same format in oral language. We can expect that this competence can have a successive influence later.

Chapter 5 Overall conclusions

5.1 Introduction

Overall, this thesis examined children's narrative competence, conceived as an ability to construct meaning through decontextualized language (Nelson, 2010), at the crossroad of oral and written language. The interest was in how children's narrative competence develops over time and what are the changes when they write or speak. The thesis addressed to some issues that are discussed in the research community: the relation between narrative competence relied on oral language, as an emergent literacy skill, and the subsequent narrative competence relied on written language, as a formalized literacy skill; the influence of orthographic competence in the expression of narrative skills in the first stage of schooling; the development of narrative competence over primary school years. The empirical studies take into consideration different transitions, the first one interested the passage from the emergent literacy to the formalized period of schooling, which corresponded to the passage of the supremacy of oral language to the twofold production of both oral and written narratives. Further, the transition from the condition of novice writers to that of expert writers was interested, since several grades of primary school were considered in the investigation of narrative competence. The dual perspective adopted in this study is the attention of both oral and written language in studying narrative competence. Attention then goes to the similarity, continuity but also diversity, discontinuity posed by the two means of expression in different evolutive scenarios.

This final chapter collates the key findings and inform about the functioning of oral and written narrative skills in a transparent language system as Italian.

5.2 Overall findings

In the first longitudinal study, children were followed from the last year of their kindergarten to the end of the first year of primary school. Using a free story generation task, their narrative competence was examined before at the oral level and subsequently at the written level. As a whole, the findings demonstrated that the level of narrative was quite stable when scores in kindergarten are compared to those at the primary level, taking into account gender

differences. Conversely, the results showed significant differences, especially in the indices of textual competence and coherence, which significantly increase in the total sample. We considered several explanations for this finding.

A key aspect of trying to identify whether oral narrative competence, as an ability of the emergent literacy period, is predictive of subsequent written narrative competence, as an ability of the formalized literacy period, was to relate them through regression analyses. The finding of the present study showed that narrative competence in childhood predicts the same ability considered one year later by writing (from age five to age six). This finding suggested that the mastery of writing allows children to preserve their narrative skills in the transition between the emergent literacy to the formalized literacy period.

Furthermore, in the second longitudinal study, children spelling-ability was taken into consideration and measured though a standardized dication task. This has been introduced to address to the debate about the influence of the lower processes of writing on narrative competence among primary school children belonging to a transparent language system.
Findings suggested that for those children who have not mastered the writing medium efficiently, the predictive links between oral and written narrative skills didn't emerge. This might suggest that a lacking low-level processing, such as in the spelling processing, can affect the cognitive and metacognitive levels (Swanson & Berninger, 1996; Graham et al., 2002). At this purpose results coming from a transparent language system are in line with those of English-speaking contexts. However, it is difficult to firmly establish the significant impact of spelling on written narrative competence among a transparent context. The many components of writing (orthographic processing, but also morpho-syntactic) make it a very complex process and they deserve further investigations. In summary, we found aspects of continuity and discontinuity between the transition from oral to written language. Continuity prevails when the child uses writing quite easily; on the contrary, the medium of write become a disadvantage for the child who has difficulties in orthographic coding. This study enlarges our knowledge about the importance of the mastery of early writing skills to preserve narrative skills in the transition from emergent to formalized litearcy and it opens the way to practical implications. First of all, the importance of simoultaneously work on skills, narrative and spelling, because of both are closely linked. Children, to effectively communicate their ideas in writing, need to be fluent with transcription and write correctly,

but even more, they must learn to construct a coherent text (Struthers et al., 2013). So, it would be useless to rely only on one of them. Moreover, it could be important, especially for those children who have difficulty, to maintain the dual channel, oral and written. However, we must recognise that in the first phase of schooling the opportunity to achieve significant improvements is still open. The practical implications above may be useful, aware of the fact that the variations in performance made by some children may be normal extensions of the observed variations, in typically developing children (Bates et al., 1995). Given the findings and limitations, it would be useful to replicate this study on a larger sample, to allow a better generalisability of the predictive model and to promote a better understanding of the mechanisms underlying the relationships between emergent and formalised literacy.

Regarding the third study it was cross-sectional in nature. The comparison between novice (2^{nd} and 3^{rd} graders) and more advanced (4^{th} and 5^{th} graders) primary school children's oral narrative competence demonstrated significant differences for a linguistic indicator, but no differences were detected for structure, linguistic devices (cohesion), number of word (word fluency), and coherence. Instead, the comparison between novice and more advanced primary school children's written narrative competence demonstrated significant increment for the indexes of structure, sentence productivity and words fluency. Increasing with age and at the same time increasing the mastery of of writing, the gained automaticity in the lower-level of writing underpinned the enrichement of children's vocabulary and ability to combine words in meaningful way to produce sentences. The gained automaticity of writing free up resources from their memory store to be destined to high level processes. These last complex processes, alongside with efficient executive and memory functions, could save children to miss the thread of speech, resulting in more incoherences.

Regarding the fourth cross-sectional study, the comparison of oral and written narratives in the first group of novice primary school children (2^{nd} and 3^{rd} graders) showed a significant difference in favour of oral narratives for the indicator of structure and narrative competence. On the other part, the comparison of oral and written narratives in the second group of more advanced primary school children (4^{th} and 5^{th} graders) showed a significant difference for the indicators of cohesion and rates of incoherences.

Regarding the fifth study, models of relationships showed both within-and-between domains associations, gaining insight that oral language was associated with the written language and it played a pivotal role till the first phase of schooling. Conversely, later a more consolidated status of the written form narration disjoined from the orality was reached.

Overall, this study confirmed a developmental trend in the written narrative skills of 2nd-to-5th Italian primary school children which has been detected by a story generation task. This task seems to be particularly suitable for capturing development among children, since an evident trajectory was seen over primary school years in the measures of narrative skills. This suggested the significance of this period for the development of literacy skills. That is, older children's stories tended to be more structured, longer and sintactically articulated stories. Current models on writing (Berninger & Swanson, 1994; Hayes, 2012) informed about the necessity to free up resources from the lower-level processing to be devoted to the higher level one's. The increasing with age corresponds with a mastering of the medium of writing which permitted to develop the quality of complex mental processing, as the construction and communication of a narrations. The strong attention and investment of the primary school educational program in the writing process underpin this development. However, children when producing stories with oral language didn't show a significant difference in the quality of their production over time, with the exception of the indix of sentence productivity. The results of the present study open the way to further research investigation which would better clarify this point. Some possible explanation can be linked with the less attention of the primary school activities to the practice of narratives by oral language, but it could be also that the age range considered is not so appropriate to detect an improvement of oral narratives.

Further, the results of the present study provided knowledge about different challenges posed by oral and written language at different point of formalized literacy. Although oral language seemed to be privileged in the first step of formalized education, subsequently it challenges children's narrations resulting in the production of more incoherences.

5.5 Practical implications

In terms of practical implications from this research, a preliminary link can be made to the assessment of narrative competence through a spontaneous story generation task. This kind of task has revealed ecologic in being an easy and convenient method for assessing children's language skills going beyond the sentence level, both via writing and speech. Therefore, its use in the educative and clinical setting for assessing and training children's communication skills should be encouraged.

This study showed the development of oral and written narrative skills among 5- to 6-year-old children followed longitudinally. As well as, development in written narrative skills across early and more advanced years of primary school. The possibility to understand the development of narrative competence is a key step for detecting starting points useful to language and communication intervention and enhancement programs. If teachers are provided with a basis of skills underpinning written narrative competence, they can integrate such knowledge in the classroom practises (Boscolo & Gelati, 2013), since they can have a clear idea of which domains children need further support and in which phases of development.

The present findings support the importance of teaching and supporting oral narrative competence, as well as automaticity in writing especially in the early years of schooling, to aid the development of the subsequent writing processes.

5.6 Limitations of the empirical studies and suggestions for future research

There are some limitations concerning the empirical studies that need to be brought into the discussion. Regarding the reliability of the results of the present study, a large variability in some of the narrative measures is a weakens point. Therefore, this issue, in addition with a quite small sample sizes, needs to be resolve in future studies.

A further point to make here relates to the selection of the writing assessment, free story-generation tasks are extensively used for research purposes, but this methodology has some restrictions. Especially for the youngest children participating, the difficulty of the tasks, as well as the presence of emotions, as shyness and anxiety, can interfere with the performance, so it might be useful to propose and to combine results from multiple and different narrative

elicitations methods, such as also picture-based stody generation tasks. Thus, future studies should integrate the use of different prompt, partner, and instructions.

Also, future studies should investigate the associations of narratives skills with other measures of narrative competence, in primis with the use of mental states used to describe the characters of the story. Also, the investigation of oral and narrative competence in association with other literacy skills, such as reading decoding and comprehension, lexical skills would be very informative in the studying of narrative competence in both typical and atypical samples.

Finally, the story grammar approach was originally socio-cultural context dependence, because of it belonged to a Western conception. Aware that narratives can be affected by cultural factors, future studies could attribute great importance to expanding the cultural background of the sample.

It would be interesting to verify the solidity of these competences during the following levels of writing abilities and to verify their relations with reading acquisition.

5.8 Final conclusions

Overall, this thesis covers a cognitive, educational, and developmental perspective. From a cognitive point of view, it has considered the writing processes and how spelling skills interact to previous oral narrative skills.

Understanding in which conditions previous oral narrative skills in kindergarten underpin later written narrative skills in primary school advance our knowledge about the relationships between oral and written language within a transparent language system as Italian.

By considering primary school developing comparison groups (novice *vs.* more advanced writers), the developmental nature of oral and written narrative skills have been discussed. The data that has been presented has shown that over primary school, written narrative skills increased, rather than oral narrative skills showed an almost similar level. Furthermore, children in the initial phase of primary school showed their familiarity with the orality, since their oral narrative performances reached higher level compared with the written form.

Finally, a relationship between the two channels has been highlighted and a pivotal role of oral narrative competence with respects the written narrative competence was revealed in the first period of schooling. Later, oral and written narrative competence seemed to proceed in a

parallel and more autonomous way, leading to hypothesise a possible renowed mutual integration in more advanced phases of the educational and developmental path.

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