TIMEWISE
Improving pupils’ understanding of historical time in primary school

Marjan de Groot-Reuvekamp
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ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad van doctor
aan de Universiteit van Amsterdam
op gezag van de Rector Magnificus
prof. dr. ir. K.I.J. Maex
ten overstaan van een door het College voor Promoties ingestelde
commissie, in het openbaar te verdedigen in de Agnietenkapel

op donderdag 23 november 2017, te 12.00 uur

door

Maria Janna Reuvekamp

geboren te ’s-Hertogenbosch
PROMOTIECOMMISSIE

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Faculteit: Faculteit der Geesteswetenschappen

This research was supported by the Netherlands Organization for Scientific Research (NWO), grant number 023.001.084 and by Fontys University of Applied Sciences, School for Child Studies and Education.
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Chapter 1

INTRODUCTION

“History is the systematic study of the past, and at its heart is time”
(Jordanova, 2000)

1.1 AIM AND SCOPE OF THIS DISSERTATION

In history education, the understanding of historical time is an important aim. It is a precondition for the development of historical consciousness, which is about making connections between interpretations of the past, understanding of the present, and perspectives on the future (Angvik & Borries, 1997; Grever, 2009; Seixas, 2006; Rüsen, 2012). Pandel (1987) describes historical consciousness as a mental structure with seven dimensions of consciousness, of which time, reality and historicity are the core dimensions and the other dimensions (identity, politics, economy-society and morality) are shared with other disciplines. In this theoretical model of historical consciousness, time is about the consciousness of past, present and future, and historicity about the consciousness of change and continuity.

This dissertation focuses on the question of how pupils’ understanding of historical time in primary school can be improved. In studies about children’s understanding of historical time different terms are used, such as ‘consciousness of time’, ‘awareness of time’ and ‘understanding of chronology’. In this study ‘understanding of historical time’ has been chosen, because this term is frequently used in curricula for history, and in English and American educational literature. (Thornton & Vukelich, 1988; Harnett 1993; Barton 1996, 2011; Wood & Holden 1997).

Primary school pupils need to understand historical time to gain historical understanding of change and continuity in people’s lives from the past to the present (Stow & Haydn, 2000). Without an understanding of time it is not possible to distinguish historical periods with their specific characteristics and to be aware of living in a continuum of time with change and continuity (Grever, 2009). The understanding of historical time also is important as a basis for historical thinking, of which thinking in terms of change and continuity is one of the core concepts (Lévesque, 2009; Seixas & Morton, 2013). Historical thinking and reasoning furthermore require that pupils can contextualize historical phenomena in a temporal, spatial, and social context for which insights into historical time and knowledge of a chronological overview of historical periods are essential (Van Boxtel & Van Drie, 2013). In learning to think and reason about differences and similarities in people’s lives in the past and the present, the understanding of historical time supports pupils in forming their identity and in preparing their participation as citizens in a pluralistic democratic society (Barton & Levenstik, 2004). This becomes ever more important in a society in which the fast development of technology and media asks for citizens who can critically interpret different kinds of information.

During the last decades a renewed interest in chronological understanding and historical knowledge influenced history curricula in primary and secondary education in the Netherlands. The emphasis on the teaching and learning of chronology, which was visible in other countries
as well, can be considered as a reaction to a crisis of identity in western countries due to developments after the fall of the Berlin Wall, ranging from a revolution in communication, to mass migration and growing tensions between Islam and the western world (Wilschut, 2010). For the Netherlands a public debate about nation building and strengthening of identity resulted in the implementation of a new curriculum (Dutch Ministry of Education, Culture and Sciences, 2006, 2010), aimed at better supporting pupils in their orientation in time. In this curriculum the past was divided into ten clear-cut eras with associative names and symbolic icons, to which a historical-cultural canon was added with fifty events and persons from Dutch history (Van Oostrom, 2007). Each era carried between two to six characteristic features, from in total 20 characteristics in primary education, to 49 in higher secondary education. These features, such as ‘the beginnings of European overseas expansion’, should help pupils in identifying historical phenomena, such as the voyages of Columbus or Magellan as belonging to the era of Discoverers and Reformers (1500-1600). However, hardly any research indicates whether the implementation of the ten-era framework actually has led to a better understanding of time. Only in grade 8, at the end of primary school, pupils take a national assessment which includes some multiple-choice items on the understanding of historical time, and until 2010 the Dutch Centre for Assessments conducted periodic surveys with grade 8 pupils to evaluate pupils’ learning in history. Evaluations of these surveys indicated that too few pupils reached a sufficient understanding of historical time (Wagenaar, Van der Schoot, & Hemker, 2010). Compared to the previous curriculum with traditional names pupils could more often correctly place historical events on a timeline with the names and icons of the ten eras. However, it was not clear whether pupils could position the eras in time and whether the new ten-era framework led to a better understanding of historical time (Wagenaar et al., 2010).

Improvement of primary school pupils’ understanding of historical time seems to be a relevant topic. However, empirical studies about the teaching and learning of historical time are scarce, mostly small-scale and not very recent. This dissertation aims at contributing to the small body of available literature by developing a teaching approach, named Timewise, to support teachers in their teaching of historical time. Relevant themes in this context that need to be explored are the conceptualization of the understanding of historical time, and how the understanding of historical time is addressed in the primary school curriculum in the Netherlands compared to England. For several reasons, as will be explained in paragraph 1.2.2, a comparison with the English primary school curriculum is interesting. Furthermore, insight into the development of the understanding of historical time within primary school pupils, recommendations for the teaching of historical time, and important issues for the professional development of teachers will be needed.

The dissertation will address these themes in five separate studies:

1. In the first study the Dutch curriculum for the understanding of historical time will be analysed and compared to the English curriculum.
2. The second study investigates pupils’ development on the understanding of historical time and how this understanding can be measured.
3. The third study explores which problems arise in pupils’ reasoning while situating historical phenomena in time.
4. The fourth study focuses on the development, the implementation and the evaluation of Timewise, a teaching approach aimed at improving pupils’ understanding of historical time.
5. The fifth study focuses on effective components of a professional development program (PDP) for teachers on the implementation of Timewise in their curriculum.
Since this dissertation focuses on the design, implementation and evaluation of a teaching approach with regard to the curriculum on the understanding of historical time, the curricular spider web (Van den Akker, 2003; Thijs & Van den Akker, 2009) provides a useful model for the visualization of a curriculum (Figure 1.1). This model consists of a core, the rationale, which serves as a central link, and nine threads, which represent all other curriculum components. For a curriculum on the understanding of historical time the rationale is about the importance of this understanding for primary school pupils in developing historical consciousness and preparing them to become responsible citizens, as was explained at the start of this paragraph. With regard to the analysis, development, implementation and evaluation of a curriculum on the understanding of historical time the threads of the spider web clarify the importance of achievable aims and objectives, concrete content, and a thoughtful realisation of a pedagogy with attention for the role of the teacher, learning activities, materials and resources and adequate assessment. In this dissertation we focus on all components, except for ‘grouping’ and ‘location’ because these are very much dependent on specific variations in schools. In Figure 1.1 the five studies of this dissertation are connected to these components.

Figure 1.1. The curricular spider web (Thijs & Van den Akker, 2009), with connections to the studies in this dissertation.

This chapter will continue with a description of the conceptual framework of the dissertation, followed by the specific research questions and an explanation of the theoretical and practical relevance. The chapter concludes with an overview of the empirical studies of this dissertation.

1.2 CONCEPTUAL FRAMEWORK
1.2.1 Conceptualization of the understanding of historical time of primary school pupils

Augustine already wrote that the concept of time is complicated to explain (O’Donnell, 1992). On the one hand there is the concept of measurable (mathematical) time, also called chronology, which derives from the movement of heavenly bodies. On the other hand there is the concept of subjectively experienced time, which Augustine described as part of consciousness in the human mind (Jansen 2001; Grever 2001, 2009; Rüsen, 2007; Wilschut 2009, 2012). According to Ricoeur (as cited in Grever, 2001; Jansen 2001) historical time is the mediator between the objective and subjective concept of time, through narrative, in which time materialises in stories that give meaning to individual historical phenomena. In order to fulfil the role of mediator the historian uses reflective instruments to bridge the gap between ‘subjective time’ and ‘objective time’: the calendar (chronology); successive generations; and remains: archives, traces and documents (Ricoeur 1984). These tools form the core of Wilschut’s (2012, p. 70) description of ‘consciousness of historical time’ in six key concepts: ‘chronology and periodisation’, which are about the division of time with the use of a timescale and about the distinction between different compartments; ‘generations and relics’, the mediating elements enabling images to be created from one time period from the perspective of another; and ‘anachronism and contingency’, which are about attitudes and perceptions of interrelationships between the different individual time compartments.

In the Netherlands Wilschut (2012) conducted research on the teaching and learning of historical time, mainly from a theoretical perspective, with a small empirical study in secondary education, in which teaching about historical eras with images and associative names appeared to be more successful than teaching about these eras with only dates and centuries. The last Dutch study before Wilschut’s thesis was an article by Fontaine (1974), in which he explored children’s development of historical time, based on insights from psychological studies, such as Piaget’s experiments on time, movement and velocity (Piaget, 1966). Although international studies about children’s understanding of historical time are rare as well, the concept of the understanding of historical time is more often elaborated on in English educational literature. In a much cited study Stow and Haydn (2000, p. 87) defined the understanding of historical time from an educational perspective, in three objectives:

- the understanding of the words and symbols to define time;
- the ability to use a time scheme and the dates by which such a scheme is symbolized;
- the knowledge of the characteristics of definite epochs in the time scheme and the ability to place these epochs roughly in the correct order.

The first objective is about the use of the appropriate vocabulary to describe time, ranging from relative phrases, such as ‘long ago’ to dates and names of historical periods. The second objective concerns the use of a timeline with historical periods and the dates belonging to these periods. With regard to the third objective pupils have to know about characteristic features of historical periods and about their chronological sequence. Dawson (2004) confirms these objectives and adds the development of a sense of period, which he describes as the ability to envisage individuals and events from the past, built on knowledge of characteristics of historical periods.

From the literature about the understanding of historical time it appears that chronology and periodisation (Wilschut, 2012) are relevant concepts, which are also included in the second and third objective in the definition of Stow and Haydn (2000). Aspects that belong to these concepts are the use of the vocabulary of time and the use of the timeline to
distinguish between different historical periods and their characteristics. The development of a sense of period (Dawson, 2004) also belongs to the understanding of historical time, as well as to the concept of change and continuity. These insights into important concepts of the understanding of historical time raise the question whether and how these concepts are related to objectives on the understanding of historical time in primary school curricula.

1.2.2 Pupils’ development in the understanding and learning of historical time

Although there are some indications about the operationalization of understanding of historical time in primary schools, there are only a few more or less recent studies about the development of understanding of historical time during the childhood period (Blyth, 1978; West, 1981a; Levstik & Pappas, 1987; Harnett, 1993; Barton & Levstik, 1996; Hoge & Foster, 2002; Hodkinson, 2003a). Psychological studies on this topic have been dominated by the theory of Piaget (1969) for a long time. Although his research did not include the understanding of historical time, the Piagetian stage theory was often (mis)used by educators to justify that the development of the understanding of historical time is tied to maturation and seems to start between the ages of 11 and 17 (Jahoda, 1963; Hallam, 1970). This was consistent with older studies which concluded that pupils start to understand historical time from the age of about 11 and emphasized that the understanding of clock and calendar time is conditional for the learning of historical time (Oakden & Sturt, 1922; Harrisson, 1934; Friedman, 1944; Bradley, 1947).

However, educational research from the second half of the twentieth century indicates that younger children are already able to understand historical time. McAulay (1961) found that 7-year olds seem to be capable of understanding periods of time and have some understanding of past social reality. Roth (1968) argued that children from the age of 5-8 start to show an interest in their own history and from the age of 9 can work with dates. In a review article on research on children’s understanding of historical time, Thornton and Vukelich (1988) concluded that from about the age of 9 children begin to master historical dates, and from 12 years on they enter a stage in which their temporal understanding is approaching that of adults. A small body of empirical studies in England showed successful teaching programs on the understanding of historical time with pupils aged 5-11 (Blyth, 1978; West, 1981a; Hodkinson, 2003a). Other studies investigated pupils’ understanding of historical time in sequencing tasks with pictures, stories and artefacts (Levstik & Pappas, 1987; VanSledright & Brophy, 1992; Harnett, 1993; Brophy, VanSledright, & Bredin, 1993; Barton & Levstik, 1996; Wood & Holden, 1997; Foster, Hoge, & Rosch, 1999; Vella, 2001; Wood & Holden, 1997; Foster, Hoge, & Rosch, 1999; Vella, 2001; Hoodless, 2002; Blow, Lee & Shemilt, 2012). These studies all concluded that the understanding of historical time starts with young children from the age of about 5 and that this understanding is a learning process that can be developed by teaching.

For the Dutch context little is known about how pupils develop their understanding of historical time during the primary school years. The only research on pupils’ performances concerns the last year of primary school (grade 8, ages 11-12) (Wagenaar et al., 2010), but there are no studies available on how the understanding of historical time of Dutch pupils develops in earlier years in primary school. However, there are some English and American studies that describe how pupils aged 5-12 use the vocabulary of time and how they use knowledge about characteristics of historical periods (Levstik & Pappas, 1987; Harnett, 1993;
Barton & Levstik, 1996; Hoge & Foster, 2002). Results from these studies indicate that pupils’ use of the vocabulary of time develops from broad relative time phrases to the use of dates and names of historical periods, and that knowledge about characteristic features develops from concrete tangible characteristics, such as clothing, transport and architecture, to more abstract ones, such as economic and political characteristics. Furthermore, some of the studies mentioned above give insights into problems that pupils encountered while placing historical phenomena in time (Levstik & Pappas, 1987; VanSledright & Brophy, 1992; Harnett, 1993; Barton & Levstik 1996; Foster et al., 1999; Hoge & Foster, 2002; Hodkinson, 2003a; Wagenaar & Hemker, 2004). For the youngest pupils (aged 5-7), who are still learning the meaning of numbers, using dates appeared to be difficult (Barton & Levstik (1996). They often used broad time phrases, such as ‘long ago’ and ‘very long ago’ (Levstik & Pappas, 1987; Harnett, 1993; Barton & Levstik 1996; Foster et al., 1999; Hoge & Foster, 2002). However, as Hodkinson (2003b) described, pupils can have very different interpretations of these terms. Older pupils used historical knowledge to place historical phenomena in time more frequently than younger pupils, although not always correctly, because they mixed accurate historical information with naïve conceptions and imaginative elaborations (VanSledright & Brophy, 1992; Wagenaar & Hemker 2004). Furthermore, in several studies pupils showed notions of present-oriented reasoning by identifying present-day characteristics that were ‘not yet’ present in historical periods, assuming that history is a linear story of progression and that people in the present are smarter than in the past (Harnett, 1993; Barton & Levstik, 1996; Hoge & Foster, 2002). In this kind of reasoning about the past, from a contemporary view, pupils can easily develop misconceptions (Lee & Ashby, 2001; Hunt, 2002). Pupils showed these kind of misconceptions, when assuming that black-and-white pictures and appearances as ‘dirty’ or ‘broken’ must be older than coloured pictures and bright shiny artefacts (Harnett, 1993; Barton & Levstik, 1996; Foster et al., 1999; Vella, 2001; Blow et al., 2012). Awareness of these problems could be helpful in gaining more insights into pupils’ learning about historical time.

The research findings discussed above raise the question of how the understanding of historical time is addressed in the intended and implemented curriculum in Dutch primary schools and how this can be compared to a curriculum on the understanding of historical time in another country with a different approach, such as England. The English curriculum (Department for Education, 2013)¹ is interesting for a comparison, since the teaching of historical time in England starts from the age of 5, whereas in the Netherlands the start of history lessons is at the age of about 9. Furthermore, the English curriculum is a ‘state curriculum’ with detailed descriptions of aims and content, whereas the Dutch curriculum only broadly describes some objectives for primary school history lessons. Another reason for the comparison with England is that the small body of research in this context mainly consists of English literature, focusing on the English curriculum.

1.2.3 Teaching about the understanding of historical time

From the previous paragraph the conclusion can be drawn that teaching is important for the development of the understanding of historical time of primary school pupils. Friedman (1982) distinguishes three components that are underlying the cognitive processes in children’s learning of time: ‘verbal lists’ of time sets, ‘associative networks’ to remember characteristic features, and ‘image coding’ as representations of events that took place in time. These components are reflected in the aspects of the understanding of historical time that were described in paragraph 1.2.1, with regard to the use of the vocabulary of time, the identification of characteristic features of historical periods and the use of timelines.

Many educationalists recommend that teaching with timelines can support pupils’ understanding of historical time, because timelines visualize temporal relations (Hoodless, 1996; Stow & Haydn, 2000; Hodkinson, 2003a, 2004; Barton, 2011; Cooper, 2012). However, there is only limited evidence to support this assertion. For primary and lower secondary education there are few, mostly small-scale empirical studies (West, 1981a; Hodkinson 2003a; Masterman & Rogers, 2002; Prangsma, Van Boxtel and Kanselaar, 2008), which report on positive effects of teaching with timelines, such as improvement in primary pupils’ linguistic abilities, their ability to sequence narrative pictures from different historical eras, and improvement in their historical knowledge. In Hodkinson’s (2003a) study, with pupils aged 8-10, a treatment group that was taught with timelines developed greater chronological understanding than the control group. Furthermore, he found that large horizontal classroom timelines with marked centuries were more effective than others, such as spiral forms.

With regard to pupils’ reasoning with the vocabulary of time and characteristics of historical periods some studies indicated that historical pictures and stories were effective materials, because pictures and stories triggered pupils’ use of relative time phrases, dates, names of historical periods and characteristic features. In several empirical studies researchers used historical pictures to investigate primary school pupils’ understanding of historical time in reasoning about chronological sequences (Harnett, 1993; Barton & LeVstik, 1996, 2002; Hoge & Foster, 2002; Van Boxtel & Van Drie, 2012), whereas others used stories (LeVstik & Papas, 1987; Hoodless, 2002). Some studies in secondary education successfully used pictures to support pupils’ in situating historical phenomena in time as well (Van Boxtel & Van Drie, 2012; Wilschut, 2012).

In the Netherlands there has not been any research into effective approaches to teaching the understanding of historical time in primary education. In the Dutch history curriculum that was implemented in 2006 the timeline of the ten-era framework was introduced as a central pedagogical tool (Commission on History and Social Sciences, 2001). However, this curriculum hardly contained guidelines for teachers on how to apply this framework in the classroom in a way that corresponds to pupils’ development in the understanding of historical time. Furthermore, there are no empirical studies about the extent to which the ten-era framework contributed to a better performance of pupils’ understanding of historical time. To gain more insight into what kind of pedagogy would be appropriate to enhance Dutch pupils’ understanding of historical time, a new teaching approach, named Timewise, was developed and tested. This study will include the full cycle for a curriculum intervention: the development and the implementation of Timewise, as well as an evaluation through measuring pupils’ learning outcomes.

1.2.4 Teachers’ professional development on improving pupils’ understanding of historical time
As research has shown, a successful implementation of a new teaching approach depends largely on the role of the teacher (Hattie, 2005; Yoon, Duncan, Wen-Yu-Lee, Scarloss, & Shapley, 2007; Desimone, 2009; Opfer & Pedder, 2011; Thurlings, Evers, & Vermeulen, 2015; Kennedy, 2016). Therefore it is important to gain insight into what is needed to support teachers in implementing a new teaching approach in their classroom.

Multiple reviews have discussed characteristics and conditions for Professional Development Programs (PDPs) that could be successful in improving teaching practices (e.g. Borko, 2004; Timperley, Wilson, Barrar, & Fung, 2007; Blank, de las Alas, & Smith, 2008; Van Veen, Zwart, & Meirink, 2012; Cherrington & Thornton, 2013). With regard to effective design features for a PDP most research seems to support five influential features: content focus, active learning, duration, collective participation, and coherence (Desimone, 2009). Besides, several studies mention additional important features, such as the accessibility of resources and the autonomy of teachers to integrate a new approach in their classroom (Knapp 2003; Blank et al., 2008; Opfer & Pedder 2011; Van Veen et al., 2012; Thurlings et al. 2015).

However, sustainable changes in teachers’ behaviour in the classroom practice appear to be difficult to realize. One of the reasons for the ineffectiveness of PDPs could be that most programs hardly relate changes in teachers’ behaviour to an improvement of pupils’ learning outcomes (Guskey, 2003; Knapp, 2003; Hattie, 2005; Van Veen et al., 2012; Kennedy, 2016). In a much cited framework Desimone (2009) includes this relation by linking design features of a PDP to changes of teachers’ beliefs, increased knowledge and skills, changes in instruction and improved pupils’ learning outcomes, within a context of situational and organizational conditions. In addition, Kennedy (2016) emphasizes that a PDP needs to pay attention to methods that support teachers in implementing new pedagogical approaches into their daily practice: prescriptions, strategies, insights, and a body of knowledge.

Furthermore, for the development of a PDP on the improvement of pupils’ understanding of historical time there are a number of issues that need attention. Many review studies emphasize the importance of subject matter and pedagogical content knowledge (Desimone, 2009; Van Veen et al., 2012, Kennedy, 2016). Therefore, historical content knowledge needs to be included as well as knowledge about the development of pupils’ understanding of time (Levstik & Pappas, 1987; Harnett, 1993; Barton & Levstik, 1996; Hoge & Foster, 2002) and about which learning activities can stimulate this development. Furthermore, there is a strong textbook tradition in the Netherlands, in which pupils read texts and answer worksheets (Wagenaar, 2010; Dutch Inspectorate of Education, 2015b). An approach like Timewise will require a different teaching approach from teachers in which they engage their pupils in learning activities with timelines, pictures and stories to stimulate them to use appropriate vocabulary of time, to identify characteristic features of historical periods, and to reason about change and continuity.

In line with the model of Desimone (2009) the PDP has to include measurements of pupils’ learning outcomes on the understanding of historical time, to make teachers realize that their efforts in adapting a new teaching approach have an effect on pupils’ performances. With regard to the professionalization of teachers most studies on professional development only focus on changes in teachers’ instructional behaviour through changing attitudes, beliefs, skills and knowledge, whereas only a few studies include measurements of pupils’ learning outcomes. In this study all components for an effective design, implementation and evaluation of a PDP (Desimone, 2009; Kennedy, 2016) will be included, in order to gain more insight into the relevance of these components.
1.3 RESEARCH QUESTIONS

As stated at the beginning of this chapter, the central question of this dissertation is: *How can pupils’ understanding of historical time in primary school be improved?* To answer this question, research is needed into the concept of the understanding of historical time in the primary school context and into pupils’ development in the learning and understanding of historical time. Little is still known about how the understanding of historical time is addressed in primary school curricula and what kinds of pedagogical approaches would be effective to enhance pupils’ performances. With regard to the implementation of a new teaching approach this dissertation will focus on how teachers can be supported to teach a new approach in their classroom and on which components are relevant in a PDP for teachers.

The central question will be answered through investigating five specific research questions:

1. How does the Dutch primary school curriculum address the development of the understanding of historical time, compared to the English curriculum?
2. How do Dutch primary school pupils aged six to twelve perform with regard to their understanding of historical time?
3. Which types of problems related to the objectives of the understanding of historical time arise in Dutch primary school pupils’ reasoning while placing historical phenomena in time?
4. What are the effects of an intervention with a new teaching approach, Timewise, on pupils’ understanding of historical time?
5. Which components are effective in a professional development program on improving primary school pupils’ understanding of historical time?

1.4 OVERVIEW OF THE DISSERTATION

In the following chapters the five empirical studies that have been conducted to answer the research questions will be described.

Chapter 2 presents an analysis of the Dutch curriculum for primary history, based on curriculum documents, surveys and interviews with teachers, teacher trainers and curriculum experts. Based on the model of the curricular spider web (Van den Akker, 2003) it was investigated how the understanding of historical time is addressed in the intended and the implemented primary curricula for history. This analysis was compared with the English national curriculum for primary history. From this comparison conclusions were drawn about different curriculum components.

Chapter 3 reports on the construction of a model on the development of pupils’ understanding of historical time. The model is based on analyses of empirical studies and descriptions in curricula and it defines pupils’ knowledge and skills for five objectives on the understanding of historical time. Based on this model a measuring instrument was developed, to measure how primary school pupils aged 6-12 perform with regard to the developmental model. This measurement was conducted with 1457 pupils from 7 primary schools.

Chapter 4 focuses on the types of problems primary pupils encounter in their reasoning, when they place historical phenomena in time. For this study 22 primary school pupils were interviewed with assignments on placing objects, situations, events and people in time. Based on literature and data from the interviews several types of problems in pupils’
reasoning are defined and illustrated. Implications for the teaching of historical time in primary school and teacher training and implications for policymakers are discussed.

Chapter 5 reports on the effects of a curriculum intervention with Timewise, a teaching approach developed to improve pupils’ understanding of historical time, in which timelines are a basis on which pupils can develop their understanding of historical phenomena and periods. After a training 16 teachers of grades 4 (ages 7/8) and 7 (ages 10/11) implemented the Timewise approach in their classrooms. The effects of this approach were measured in a quasi-experimental pre-/post-test design with the instrument that was developed in chapter 3.

Chapter 6 reports on which components of the professional development program (PDP), consisting of a training and the implementation of Timewise, contributed to pupils’ learning outcomes. A multimethod design with questionnaires, logs, observations and interviews was used to explore how the teachers perceived the supportive methods provided by the PDP (Kennedy, 2016) and how these methods and the components of the PDP, such as changes in attitudes and beliefs, gains in knowledge and skills, and changes in the instructional behaviour (Desimone 2009), related to pupils’ learning outcomes.

Finally, chapter 7 summarizes and discusses the main outcomes of the different studies. Subsequently, directions for future research are suggested. We conclude chapter 7 with practical implications for the teaching of the understanding of historical time in primary school and in teacher training and recommendations for educational policy makers.

The chapters of this thesis have been written as separate articles in such a way that they can be read independently. As a consequence, it is inevitable that some sections of chapters show overlap. Chapters 2 to 4 are written in British English, since these chapters have been published in British journals. Chapters 5 and 6 are in American English, since these have been published (5) and submitted (6) in American journals. Chapters 1 (Introduction) and 7 (Conclusions and discussion) and the summary are in British English.

Because the naming of grades can be confusing in the different languages, Table 1.1 is included. It explains the school systems with regard to years and grades in the Netherlands, England and the United States.
Table 1.1. Overview of years and grades in primary school in England, the Netherlands and the United States

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<th>England</th>
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<td>Grade 8</td>
<td>Grade 6</td>
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Chapter 2

THE UNDERSTANDING OF HISTORICAL TIME IN THE PRIMARY HISTORY CURRICULUM IN ENGLAND AND THE NETHERLANDS²

This study focuses on the comparison of the English and the Dutch primary history curriculum regarding the understanding of historical time. We compare different aspects of both curricula that can apply to other subjects as well, for example the question ‘what age would be appropriate to start a subject in primary school?’ Here, we emphasise that exposure to different learning processes is more important than pupils’ age and maturity. Drawing on analyses of curriculum documents, surveys (n =128) and interviews (n =25), we explored how the understanding of historical time is addressed in the intended and the implemented primary curricula for history. The analysis of the data indicates that teachers in both countries do not teach all objectives of the understanding of historical time. Although in England the history curriculum starts earlier, the episodic structure of the curriculum is not very helpful to support pupils understanding of historical time. In the Netherlands the framework of ten eras is mostly taught chronologically; however, neither the sequence nor the dates of historical periods are explicitly taught. Apparently the teaching and learning of historical time in both countries needs improvement and we conclude with some suggestions to accomplish this.

Chapter 3

PRIMARY SCHOOL PUPILS’ PERFORMANCES IN UNDERSTANDING HISTORICAL TIME

This study focuses on the development of the understanding of historical time of pupils in primary school. We present a developmental model with three stages: emergent, initial and continued understanding of historical time. Based on this model we constructed an instrument to measure how pupils aged 6-12 perform. The participants were 1457 pupils from 7 Dutch primary schools. The analysis of the data showed that in all three stages pupils in higher grades significantly outperformed pupils in lower grades and that pupils’ performances were influenced by the variables gender and parents’ education. In all grades there seemed to be room for improvement, especially in the lower grades (ages 6-9) where pupils have hardly had any teaching on the understanding of historical time. However, in the higher grades as well (ages 10-12), pupils could improve on the level of continued understanding of historical time.

Chapter 4

“EVERYTHING WAS BLACK AND WHITE . . .” PRIMARY SCHOOL PUPILS’ NAIVE REASONING WHILE SITUATING HISTORICAL PHENOMENA IN TIME

The understanding of historical time is an important aim in primary school history education. This study focuses on problems pupils encounter in their reasoning, when carrying out assignments on placing historical phenomena in time. The context is the Dutch curriculum with ten eras and characteristic features, which was implemented to support pupils in orientating themselves in time. Twenty-two pupils of grades 3 to 8 (ages 6-12) conducted assignments in which they had to place objects, situations, events and people in time. These assignments were based on the objectives on the understanding of historical time. Results confirmed problems that had been described in previous studies, but some other problems were identified as well. These problems were related to the names and icons and characteristic features of the ten eras, which sometimes helped, but sometimes also hindered pupils in their reasoning. Awareness of these problems is helpful for the development of a pedagogy to improve pupils’ understanding of historical time. The study concludes with implications for teachers, teacher trainers and policymakers.

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4 This chapter has been published as: De Groot-Reuvekamp, M., Ros, A., & Van Boxtel, C. (2017). EVERYTHING WAS BLACK AND WHITE . . .” Primary school pupils’ naive reasoning while situating historical phenomena in time. Education 3-13: International Journal of Primary, Elementary and Early Years Education. Advance online publication http://dx.doi.org/10.1080/03004279.2017.1385642
Chapter 5

IMPROVING ELEMENTARY SCHOOL STUDENTS’ UNDERSTANDING OF HISTORICAL TIME: EFFECTS OF TEACHING WITH “TIMEWISE”

The teaching of historical time is an important aspect in elementary school curricula. This study focuses on the effects of a curriculum intervention with ‘Timewise’, a teaching approach developed to improve students’ understanding of historical time using timelines as a basis with which students can develop their understanding of historical phenomena and periods. The study, in which 16 teachers from grade 2 (ages 7-8) and from grade 5 (ages 10-11) participated, represents the first curriculum intervention on the understanding of historical time in elementary schools in the Netherlands. The effects were measured in a quasi-experimental pre-/post-test design. Mixed model linear analyses showed that both for grade 2 and grade 5, students in the experimental condition (n=396) scored significantly higher on the post-test than students in the control condition (n=392), with a medium effect size. Implications for the teaching of historical time in elementary school and in teacher training are discussed.

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5 This chapter has been published as: De Groot-Reuvekamp, M., Ros, A., Van Boxtel. (2017). Improving elementary school students’ understanding of historical time: effects of teaching with “Timewise”. Theory & Research in Social Education. Advance online publication http://dx.doi.org/10.1080/00933104.2017.1357058
Chapter 6

A SUCCESSFUL PROFESSIONAL DEVELOPMENT PROGRAM IN HISTORY: WHAT MATTERS?

This study focuses on a successful Professional Development Program (PDP) for improving students’ understanding of historical time, consisting of a training and the implementation of Timewise, a teaching approach in which timelines were used consistently. The PDP was carried out with 16 teachers in grades 2 (ages 7-8) and 5 (ages 10-11). Supportive methods, such as prescriptions, strategies, insights and historical background knowledge, enabled teachers to implement Timewise. Teachers’ beliefs on teaching the understanding of historical time changed as a result of the PDP. The highest student learning gains were reached by teachers who successfully implemented the aimed instructional behavior.
Chapter 7

CONCLUSIONS AND DISCUSSION

1.1 Introduction

The understanding of historical time is an important aim in history education which is conditional for the development of historical consciousness (Pandel, 1987; Angvik & Borries, 1997; Grever, 2009; Seixas, 2006; Rüsen, 2012) and for preparing pupils to participate as citizens in a pluralistic democracy (Barton & Levstik, 2004) in which the fast development of new technologies and media ask for critical interpretation of information. Renewed interest in chronology as a means of gaining overview knowledge resulted in the Netherlands in the implementation of a new curriculum for history, which included a ten-era framework and characteristic features to support pupils in their orientation in time (Dutch Ministry of Education, Culture and Sciences, 2006, 2010). However, hardly any research has been conducted on primary school pupils’ development in the understanding of historical time, nor on effects of the new curriculum on this understanding. The only studies on this topic consist of surveys with pupils in grade 8 at the end of primary school, which concluded that too few pupils performed sufficiently on the understanding of historical time (Wagenaar et al., 2010).

The central question of this dissertation was: How can pupils’ understanding of historical time in primary school be improved? The study not only explored the concept of the understanding of historical time and pupils’ development, but also focused on the measurement of results and on improvement of the curriculum on the understanding of historical time. To answer the central question, five specific research questions were addressed, which corresponded to the five empirical chapters (2-6) of this dissertation:

1. How does the Dutch primary school curriculum address the development of the understanding of historical time, compared to the English curriculum?
2. How do Dutch primary school pupils aged six to twelve perform with regard to their understanding of historical time?
3. Which types of problems related to the objectives of the understanding of historical time arise in Dutch primary school pupils’ reasoning while placing historical phenomena in time?
4. What are the effects of an intervention with a new teaching approach, Timewise, on pupils’ understanding of historical time?
5. Which components are effective in a professional development program on improving primary school pupils’ understanding of historical time?

In this chapter the main findings and conclusions for each sub-study are presented, followed by general conclusions, discussion and directions for future research. This chapter concludes with practical implications.
1.2 Main findings and conclusions

1.2.1 How does the Dutch curriculum address the development of the understanding of historical time, compared to the English curriculum?

To answer this question the intended and implemented curricula for the understanding of historical time in the Netherlands and England were analysed, based on the model of the curricular spider web (Van den Akker, 2003; Thijs & Van den Akker, 2009). Based on literature (Stow & Haydn, 2000; Dawson, 2004; Wilschut, 2012) important aspects of the understanding of historical time were defined, such as the use of the vocabulary of time, the chronological sequence of historical phenomena and periods, the use of the timeline and characteristics of historical periods, and reasoning about change and continuity. These aspects were investigated in the curricula.

Results from the analyses of the Dutch Core Objectives (Dutch Ministry of Education, Culture and Sciences, 2006) for history showed that all aspects were included in the objectives, with the exception of sequencing of historical periods in chronological order. However, with regard to the implemented curriculum results from surveys and interviews indicated that teachers did not teach all objectives in their lessons. Although about 90% of the teachers reported in the survey that they found the aspects important, teachers did not explicitly pay attention to the dates of historical periods, nor to their sequence. A majority of the teachers reported that they did not use timelines to teach pupils how to place events, people and changes in the correct historical period. Furthermore, teachers hardly engaged their pupils in identifying change and continuity within and between historical periods. The analysis of the English curriculum (Department for Education, 2013) showed similar results on the teaching of the objectives.

For the curriculum component content most Dutch schools teach the ten curricular eras in chronological order (Wagenaar et al., 2010). In interviews Dutch teacher trainers and experts stated that they found the ten-era framework more supportive for pupils’ development in the understanding of historical time than the previous framework with traditional periods, such as Middle Ages and Modern Times. However, trainers and experts who were interviewed, doubted if the characteristic features were helpful for pupils, and called into question if teachers were aware of these curricular characteristics. In most English schools historical periods, such as the Romans, the Tudors and the Second World War, were not taught chronologically (Harnett & Nichol, 2011).

Another difference with regard to the curriculum component time was the start of the teaching of history, which in England is in Key Stage 1, at the age of 5-6, and in the Netherlands in most schools in grade 5, at the age of 8-9. In this respect the Dutch curriculum relies on older literature, based on the Piagetian stage theory (Jahoda, 1963; Piaget, 1969), according to which pupils cannot start to learn about historical time before the age of 9. Most Dutch teachers in the survey agreed to this (73%). The English curriculum is more in line with theories which state that the development of the understanding of historical time is a learning process rather than

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http://webarchive.nationalarchives.gov.uk/20131202172639/http://www.education.gov.uk/schools/teachingandlearning/curriculum/primary. The National Curriculum was under consultation at the time of writing. The new curriculum was implemented in September 2014.

Although the teaching of historical time starts earlier in England than in the Netherlands, evaluations indicate that English pupils find it difficult as well to make comparisons between events within and between historical periods and the present, and to place historical phenomena in the correct period (Ofsted, 2011). This may be caused by the episodic structure of the curriculum. However, just the chronological teaching of eras, as happens in the Netherlands, does not seem to guarantee that pupils develop an understanding of historical time, particularly when teachers do not stimulate pupils to make links between historical periods and to use timelines to visualise the sequence of the eras and to place historical phenomena in time.

In both countries there is hardly any assessment of pupils’ performances in the understanding of historical time. National evaluations of the implemented history curricula showed that many pupils do not have a chronological overview and find it hard to make comparisons between historical periods and to place historical phenomena in time (Wagenaar et al., 2010; Ofsted, 2011). In the Netherlands these evaluations only include pupils of grade 8 (ages 11-12) at the end of the primary school. To gain more insight into pupils’ development between the ages of 6 and 12 further research was conducted, which will be reported on in the next paragraph.

1.2.2 How do primary pupils aged 6-12 perform on the understanding of historical time?

Building on descriptions in English and Dutch curricula and on literature (Stow & Haydn, 2000; Dawson, 2004; Wilschut, 2012), five objectives on the understanding of historical time were defined in chapter 3, consisting of applying the vocabulary of time, sequencing events, people and historical eras in chronological order, using the timeline to place events and people in time, identifying characteristic features of different historical periods, and comparing and contrasting historical periods. With regard to these objectives pupils’ development on the understanding of historical time was described on the basis of studies about pupils’ performance in tasks on sequencing historical pictures (Levstik & Pappas, 1987; Harnett, 1993; Barton & Levstik, 1996; Hoge & Foster, 2002). This resulted in a developmental model on primary school pupils’ development on the understanding of historical time (Table 3.1; 5.1) in three stages: emergent, initial and continued understanding of historical time. This model describes pupils’ development on the objectives on the understanding of historical time in increasing difficulty and abstraction. For instance, the use of the vocabulary of time was described from the use of broad time phrases, such as ‘long ago’ to the use of dates and centuries. The identification of characteristics of historical eras in this model develops from concrete characteristics such as clothing and architecture to more abstract characteristics, like economic and political events.

Based on this developmental model a measuring instrument was constructed, consisting of multiple-choice items with increasing difficulty, according to the descriptions of the stages in the model. After a consultation with assessment experts thinking-aloud interviews with pupils, and a pilot in one school, the test was taken by 1457 pupils of grades 3-8 (ages 6-12) in seven Dutch primary schools. Results from this test showed that the mean scores for correct answers increased through the grades and that pupils in higher grades significantly outperformed pupils in lower grades. In line with findings in Dutch national tests
(Wagenaar et al., 2010) we found a small but significant effect for parents’ educational levels, a significant effect of pupils’ reading levels, and significantly lower scores for girls versus boys.

From this study it can be concluded that pupils’ performances confirmed the structure of the model with descriptions in increasing difficulty for pupils’ development on the understanding of historical time. Furthermore, the test results indicated that there was room for improvement in all grades, which was expected for the lower grades, where history did not feature in the curriculum. However, pupils in the higher grades could also improve on understanding the relation between dates and centuries, the placing of pictures of events and situations on the timeline, and the ability to compare historical phenomena within and across historical periods.

1.2.3 Which types of problems related to the objectives of the understanding of historical time arise in primary school pupils’ reasoning while placing historical phenomena in time?

Chapter 4 explored types of problems which arose in pupils’ reasoning while solving assignments on situating historical phenomena in time. In this small-scale qualitative study (n=22) pupils of grade 3 to 8 were probed on their answers. In this way problems in their reasoning could be retrieved, which could not be revealed by the paper and pencil test in chapter 3.

Results showed that several types of problems related to the objectives on the understanding of historical time arose in pupils’ reasoning. These problems could partially be related to problems previously described in literature with regard to pupils’ use of the vocabulary of time, the identification of characteristic features of historical eras, and problems related to present-oriented thinking in assignments on sequencing and comparing historical phenomena of different historical periods (Levstik & Pappas, 1987; Vansledright & Brophy, 1992; Harnett, 1993; Barton & Levstik 1996; Foster et al., 1999; Hoge & Foster, 2002; Hodkinson, 2003b; Wagenaar & Hemker, 2004). However, next to these problems, other problems were identified in pupils’ reasoning as well, which appeared to be related to the Dutch curriculum with ten eras and characteristic features. This curriculum was implemented in 2006 (Dutch Ministry of Education, Culture and Sciences, 2006) to support pupils in their orientation in time. Some names of eras appeared to be too abstract, whereas other names were too little specific. Pupils hardly reasoned with the curricular characteristic features of the ten eras and they often could not correctly place eras on a timeline with only dates. For timelines that included the names and icons of eras pupils often associated the names and the icons with clues in pictures or the texts of the assignments instead of trying to identify characteristic features of an era.

This study provides a coherent overview of types of problems, related to the objectives on the understanding of historical time which arise in pupils’ reasoning when situating historical phenomena in time. This overview provides more insight into pupils’ development in the understanding and learning of historical time, which is important for teachers and teacher trainers and can be helpful for the development of a teaching approach to improve pupils’ understanding of historical time.

1.2.4 Effects of an intervention with Timewise on pupils’ understanding of historical time

In chapter 5 effects of a curriculum intervention with a new teaching approach, named Timewise, were described. This teaching approach built on the developmental model with objectives and stages on the understanding of historical time (Chapter 3) and on literature
about teaching of historical time (West, 1981a; Levstik & Papas, 1987; Harnett, 1993; Barton & Levstik, 1996, 2002; Hoodless, 2002; Hoge & Foster, 2002; Hodkinson 2003a; Masterman & Rogers, 2002; Prangsma, Van Boxtel and Kanselaar, 2008; Van Boxtel & Van Drie, 2012). Deriving from this literature and findings in the previous chapters of the dissertation the main design principles of Timewise were that teachers should systematically pay attention to the objectives on the understanding of historical time and should engage their pupils in activities with timelines, stories and pictures. Sixteen teachers from grade 4 (ages 7-8) and grade 7 (ages 10-11) were trained to implement Timewise in weekly lessons for a period of five months. In a quasi-experimental pre-/post-test design with the treatment group (n=396) and a control group (n=392) pupils’ learning gains were tested with the instrument that was developed in chapter 3.

Results showed that pupils in the treatment condition scored significantly higher on the post-test compared to pupils in the control condition and compared to the pre-test, with medium effect sizes both in grade 4 and grade 7. Furthermore, small effects were found for age, gender and reading levels, but no effects were found for parents’ educational levels. This confirms findings in national assessments for grade 8 (ages 11-12) in the Netherlands (Wagenaar et al., 2010), except for the lack of effect of parental education.

For grade 4 the significantly higher learning gains of the treatment group, who were taught with Timewise, confirm suggestions from previous research (Harnett, 1993; Barton & Levstik, 1996; Stow & Haydn, 2000; Hoodless, 2002) that the development of understanding historical time in children can be stimulated by learning and instruction and can start earlier than the age of 9 or 10, as is usual in most countries.

For grade 7 it could be concluded that systematic teaching according to the objectives of historical time, with a consistent use of timelines, resulted in higher learning outcomes on pupils’ understanding of historical time than in the control group, in which teachers were teaching with textbooks and did not use timelines. In this respect this study adds new empirical evidence to older studies on the use of timelines (West, 1981a; Masterman & Rogers, 2002; Hodkinson 2003a).

1.2.5 Which components were effective in a PDP on improving pupils’ understanding of historical time?

In chapter 6 we explored which features of the PDP for teachers contributed to the positive effects on pupils’ learning gains on the understanding of historical time, as described in chapter 5. The PDP, which consisted of a training and the implementation of Timewise, was based on a model about effective components for the development, implementation and evaluation of PDPs (Desimone; 2009) and on methods to support teachers in the implementation of a new teaching approach in their classroom practice (Kennedy, 2016). The model of Desimone (2009) links design features, changes of teachers’ beliefs, increased knowledge and skills and changes in instruction to improvement of learning outcomes of pupils. The supportive methods of Kennedy (2016) consist of prescriptions, strategies, insights and a body of knowledge. Sixteen teachers took part in two training sessions, after which they implemented Timewise in their classrooms in grade 4 (age 7-8) or 7 (age 10-11).

Results from questionnaires, logs, observations and interviews confirmed that improved learning outcomes could be attributed to the interplay between changes of teachers’ attitudes and beliefs, increased knowledge and skills and changes in instruction (Desimone, 2009). Furthermore, teachers appreciated the supportive methods (Kennedy,
2016): during the implementation of Timewise they felt supported by clear prescriptions, by the instructional strategies and background knowledge, and by the attractive materials and resources. This is in line with findings in several studies on effectiveness of PDPs, which mention the importance of availability and usefulness of materials and resources, as well as teachers’ autonomy to integrate a new teaching approach into their daily work (Knapp, 2003; Blank et al., 2008; Opfer & Pedder 2011; Van Veen, Zwart, & Meirink, 2012; Thurlings, Evers, & Vermeulen, 2015; Kennedy, 2016). In questionnaires and interviews teachers reported changes in beliefs on teaching about the understanding of historical time, with regard to pupils being more able to learn about historical time than they would have expected. However, the belief that learning clock and calendar time is a prerequisite for the learning about historical time, appeared to be rather persistent. Observations indicated that the highest learning gains were reached by the teachers with the highest results on the implementation of the instructional behaviour aimed at, which consisted of systematically paying attention to the five objectives on the understanding of historical time and a consequent use of timelines. In the questionnaire one year after the PDP, all teachers reported that they still felt fully competent in their knowledge and skills in the teaching of historical time, particularly in the use of the classroom timeline.

From this study it can be concluded that it is relevant for a PDP to focus on all components of the model of Desimone (2009) and to take the supportive methods of Kennedy (2016) into account. Practical and user-friendly materials and resources in particular appeared to be important to support teachers in the implementation of new pedagogical approaches in their classroom.

### 7.3 General conclusions

Our findings provide several conclusions with regard to answering the central research question of how pupils’ understanding of historical time in primary school can be improved.

Firstly, improvement of pupils’ understanding of historical time requires a clear conceptualization of the understanding of historical time and what it means to make progression on this understanding. The first studies in this dissertation resulted in an operationalization of the understanding of historical time in the primary school context in a set of objectives based on concepts of the understanding of historical time, such as chronology, periodization, change and continuity, and a sense of period (Stow & Haydn, 2000; Dawson, 2004; Wilschut, 2012). These objectives correspond with descriptions in the Dutch core objectives (Dutch Ministry of Education, Culture and Sciences) and the English National Curriculum (Department for Education, 2013). The developmental model with three stages (emergent, initial and continued understanding of historical time) describes pupils’ development in the understanding of time. In this model the objectives are operationalized for each of the three stages, based on descriptions in curricula and literature (Levstik & Pappas, 1987; Harnett, 1993; Barton & Levstik, 1996; Hoge & Foster, 2002). The measuring instrument that was developed on the basis of the developmental model can be applied to gain insights into pupils’ performance on the understanding of time. Measurements with pupils aged 6 to 12 indicated that these pupils developed their understanding of time in line with the described stages and that there seemed to be room for improvement on all stages. The third study resulted in an overview of types of problems that might arise in pupils’ reasoning on the understanding of historical time, when they carried out assignments in which
they have to place historical phenomena in time. These problems related to names and characteristics in the Dutch ten-era curriculum and to problems that were also found in other studies, such as problems concerning the vocabulary of time, characteristics of historical periods and present-oriented thinking (Levstik & Pappas, 1987; VanSledright & Brophy, 1992; Harnett, 1993; Barton & Levstik 1996; Foster et al., 1999; Hoge & Foster, 2002; Hodkinson, 2003b; Wagenaar & Hemker, 2004).

Secondly, pupils’ understanding of historical time can be improved by a pedagogical approach in which teachers systematically engage their pupils in learning activities that are important for the objectives on the understanding of historical time, such as attaching and sequencing pictures to a classroom timeline, identifying characteristic features of eras in pictures and stories, and comparing characteristics of different eras with each other and with the present. Timewise provided a teaching approach that appeared to be successful in improving pupils’ understanding of time. Design principles of Timewise derived from earlier studies on teaching with timelines (West, 1981a; Masterman & Rogers, 2002; Hodkinson 2003a; Prangsma et al., 2008) and on the use of pictures and stories (Levstik & Papas, 1987; Harnett, 1993; Barton & Levstik, 1996, 2002; Hoodless, 2002; Hoge & Foster, 2002; Van Boxtel & Van Drie, 2012). It could be concluded that the pupils in grade 4 as well as in grade 7 who were taught with Timewise showed significantly higher learning gains than a control group.

Thirdly, improvement of pupils’ understanding of historical time can be realized by supporting teachers with a professional development program that provides insights into the development of pupils’ understanding of historical time and concrete materials. The supportive methods (Kennedy, 2016) of the PDP in this study, which contained a comprehensive instructional manual and attractive materials and resources, such as a classroom timeline and a storybook, appeared to be important factors for the success of Timewise. Furthermore, results showed that participating teachers changed their beliefs about pupils’ development in the understanding of historical time through the experience that pupils were more able than they expected, and that they gained knowledge and skills on teaching about historical time, which they applied in the instructional behaviour aimed for. By including measurements of pupils’ learning outcomes this PDP included all components of the model of Desimone (2009). These findings indicate that for a PDP to be successful, the combination of the supportive methods of Kennedy (2016) and components of the model of Desimone (2009) is important.

7.4 Discussion and directions for future research

The goal of this dissertation was to improve the understanding of historical time of primary school pupils. The different studies focused not only on the operationalization of objectives and on pupils’ development in the understanding of historical time, but also on aspects of teaching and the professionalization of teachers with regard to improving pupils’ understanding of historical time.

The understanding of historical time was conceptualized according to concepts derived from educational literature (Stow & Haydn, 2000; Dawson, 2004; Wilschut, 2012). On the basis of these concepts, objectives were formulated for the primary school context, with descriptions of knowledge, insights and skills that pupils require to understand historical time. However, the objectives as defined in this study do not concern the phenomenon of time as a metahistorical concept, nor how time is dealt with in different societies in the past and in the
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present. Such concepts might be difficult for primary school pupils; it would nevertheless be interesting for further research to explore pupils’ reasoning on time as a second order concept.

With regard to pupils’ development in the understanding of historical time a model with stages of development was developed, based on curricula and literature (Levstik & Pappas, 1987; Harnett, 1993; Barton & Levstik, 1996; Hoge & Foster, 2002), which could provide a valuable addition to the Dutch curriculum for history in primary school. The present core objectives are formulated in rather broad terms (Dutch Ministry of Education, Culture and Sciences, 2006, 2010), and suggestions in the additionally suggested learning trajectories are hardly elaborated for the teaching of historical time, which particularly applies for younger pupils. The developmental model represents an elaborated learning trajectory, based on concepts in international literature on the understanding of historical time (Stow & Haydn, 2000; Dawson, 2004; Wilschut, 2012). In this respect the objectives in the model could apply to curricula in other countries as well. However, the elaborations for the three stages were described in the context of the Dutch primary school history curriculum, which is rather nationally orientated. Further research could explore whether it would be possible to describe pupils’ development in more general terms or how descriptions could be adapted to suit curricula in other parts of the world.

Since no existing instruments were available, a measuring instrument was developed to gain more insight into pupils’ performances on the understanding of historical time. For the Dutch context this is the first instrument to examine the understanding of historical time of pupils between the ages 6-12. A drawback was the modest reliability. Although the development of the instrument went through different versions and pilots, we did not succeed in reaching higher Cronbach’s alphas. These modest alphas might be explained by the fact that different objectives were measured with different types of questions, with and without pictures and with and without timelines. Additionally, there were relatively many pupils with low scores, probably because of guessing. To enhance validity, the questions were based on consultations with experts, on the curriculum for history and on the developmental model, which was based on previous studies. Because of the chronological structure of the curriculum, however, many pupils had not yet been taught about several eras, which particularly applied for the lower grades in which history did not feature at all. Other approaches might be possible, for instance in measuring pupils’ insights into the concept of time. Despite these limitations results showed that the mean scores of correct answers rose through the years.

The small-scale study on problems in pupils’ reasoning on historical time provided insights into types of problems that might arise in pupils’ reasoning when situating historical phenomena in time. These problems partially related to the names of eras and to characteristic features that were hardly known. More research would be needed to systematically investigate which names of eras and characteristic features cause more or less problems in pupils’ reasoning. Furthermore, more large-scale research could explore which problems belong to different ages and how a pedagogy can take these problems into account.

Findings in this dissertation appeared to confirm that pupils’ development in the understanding of historical time can be stimulated by teaching, which seems to further refute the Piagetian stage theory and the limitations of early grade cognition that for a long time influenced curriculum developers and teachers to believe that the teaching of historical time cannot start before pupils are at least 9 years old (Jahoda, 1963; Piaget, 1969; Hallam, 1970).

7 http://tule.slo.nl/
However, pupils in grade 4 in the control condition, who received no teaching on the understanding of historical time, showed progress as well. More research is needed into the question to what extent the development of the understanding of time within children is a process of maturation and/or learning, and which factors inside and outside school influence this process.

Grade 4 pupils (age 7-8) who took part in the intervention appeared to have no problems in the learning activities of Timewise, despite the fact that some of the teachers believed these lessons would be too difficult. Furthermore, experiences in England and findings in literature indicate that history lessons can start from the age of 5 (Levstik & Pappas, 1987; VanSledright & Brophy, 1992; Harnett, 1993; Brophy, VanSledright, & Bredin, 1993; Barton & Levstik, 1996; Hoge & Foster, 2002; Hoodless, 2002; Blow, Lee & Shemilt, 2012). An advantage would be that pupils can spend more time on the development of the understanding of time in relation to possible advantages in later years are not yet clear. Further longitudinal research could give insights into how an early start of the teaching about historical time might positively influence pupils’ understanding of historical time in higher grades of primary school and in secondary education.

The curriculum intervention with Timewise represents the first intervention study in the Dutch context that measures the effects of a teaching approach on the improvement of pupils’ understanding of historical time. Positive effects on pupils’ learning outcomes were found, but limitations must be taken into account that only sixteen, mostly motivated teachers took part in the intervention.

Six of the eight participating teachers in grade 7 used Timewise in addition to regular textbook lessons, which meant that they spent extra time on history lessons. Usually teachers will not have this time available. On the other hand, in the classes of the two teachers who used the Timewise approach instead of textbook lessons, pupils’ learning gains were well above average. More large-scale research would be needed, in other grades in primary school as well, to investigate how Timewise might be integrated into textbooks or how teaching history through Timewise might replace the textbook curriculum for the teaching of history.

The components of the curricular spider web (Van den Akker, 2003; Thijs & Van den Akker, 2009) were supportive for the development, implementation and evaluation of Timewise. However, the components grouping and location were disregarded. The Timewise approach predominantly focused on whole class activities. Further research could explore the effect of co-operative tasks in which, for instance, all pupils use the vocabulary of time or work in groups on sequencing tasks with historical pictures and timelines. With regard to location, further research could focus on possibilities of ICT-applications to create possibilities for learning inside and outside the classroom (see for instance the studies of Masterman & Rogers (2002), Foreman, Boyd Davis, Moar, Korallo, & Chappel, 2008, and Prangsma et al., 2008). Although Timewise included a digital timeline with exercises for the interactive whiteboard (IWB), teachers hardly used this application, because they preferred learning activities with the large timeline on the classroom wall. Further research could investigate how applications that include timelines on the IWB, tablets or smart phones might be user-friendly and effective. Effects of ICT-applications that allow pupils to experience a sense of period (Dawson 2004), in for instance a Virtual Reality environment, would be interesting to explore as well.

The PDP consisting of a training and the implementation of Timewise showed significant effects on pupils’ learning outcomes, although it must be acknowledged that this was a short-term effect and with a small group of participants. Supportive methods like
prescriptions, strategies, insights and a body of knowledge (Kennedy, 2016) added content and pedagogical content knowledge, which appeared necessary since primary school teachers, who need to teach the whole range of subjects, often only have superficial pedagogical content and subject matter knowledge. In this study these methods appeared to be a valuable addition to the design features in the model of Desimone (2009). Since PDPs about specific school subjects, such as history or geography, are scarce, more research on the pedagogy of school subjects would be recommended, in which effects on pupils learning outcomes should be included. Furthermore, the fact that the PDP was conducted by the researcher, a teacher educator who is familiar with the work of teachers, could also have contributed to the positive effect, which is in line with findings of Yoon et al. (2007) and Kennedy (2016).

The PDP included neither coaching nor participation in whole school teams, which in literature are often mentioned as effective characteristic for PDPs (Knapp, 2003; Wayne, Yoon, Zhu, Cronen & Garet, 2008; Desimone, 2009; Opfer & Pedder, 2011; Van Veen et al., 2012). Future research could investigate the effects of a PDP on Timewise on a larger scale, with whole school teams and coaching sessions in the schools. In these session, for instance, the problems could be addressed that arose in the study about pupils’ reasoning while situating historical phenomena in time, into which the PDP on Timewise paid only little attention.

7.5 Implications for practice

This dissertation aimed at improving pupils’ understanding of historical time in primary school. The curriculum on the understanding of historical time in the primary school context was investigated, as well as pupils’ development in the understanding and learning of historical time. Furthermore, effective aspects of teaching and teacher training were explored. Conclusions of the several studies lead to some practical implications for teachers, teacher trainers, textbook editors and educational policy makers. This dissertation yielded several practical tools that can be applied by primary school teachers and by teacher trainers in initial and in-service training of (prospective) teachers:

- a model with objectives and stages on pupils’ development in the understanding of historical time;
- an instrument to assess pupils’ development in the understanding of historical time;
- an overview of types of problems that might arise in pupils’ reasoning about historical time;
- Timewise, a teaching approach with materials and resources on a website;
- a professional development program (PDP) for teachers on the implementation of Timewise.

For teachers these tools can be applied for the development, implementation and evaluation of lessons about the understanding of historical time in grades 3 to 8. Teacher trainers can apply these tools in educating student teachers and for in-service training with school teams.

Textbook editors can apply the insights of this study to develop textbooks and on-line materials, not only for grade 5-8, but also for grade 3 and 4, that match with the objectives and stages in the developmental model. These materials may include activities with timelines and authentic pictures and stories to stimulate pupils’ development in the understanding of historical time.
For educational policy makers a recommendation would be to evaluate the framework of the ten eras and the characteristic features, since this study indicates that primary school pupils have problems in reasoning on the understanding of historical time that relate to names of eras and the predominantly economic and political characteristic features. This evaluation already has started in the Dutch Association for Teachers in History and Citizenship Education (Van der Kooij & Van der Schans, 2017). A future revision of the curriculum might take the findings from this dissertation into account.

Finally the conclusions and practical implications in this dissertation could contribute to the professionalization of teachers and teacher trainers and inspire them to improve the understanding of historical time of pupils in primary school.
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SAMENVATTING (Summary in Dutch)

TIJDWIJS

Verbetering van het historisch tijdsbesef van leerlingen in de basisschool

De ontwikkeling van historisch tijdsbesef is een essentieel doel van geschiedenisonderwijs. Het is een onderdeel van de ontwikkeling van historisch bewustzijn en het helpt leerlingen bij de vorming van hun identiteit en bij hun ontwikkeling tot verantwoordelijke en kritische burgers. Daarnaast is historisch tijdsbesef, met concepten als chronologie, periodisering, continuïteit en verandering, onmisbaar bij historisch denken en redeneren.

Het onderwijs in historisch tijdsbesef begint in de basisschool, waar in 2006 een nieuw curriculum met tien tijdvakken is ingevoerd, met als doel het historisch tijdsbesef van leerlingen te verbeteren. Periodieke peilingen van het Centraal Instituut voor Toetsontwikkeling (Cito) in groep 8 tonen echter aan, dat te weinig leerlingen aan het einde van de basisschool het niveau van voldoende bereiken voor componenten van tijdsbesef, zoals het plaatsen van gebeurtenissen op een tijdbalk en het hanteren van de daarbij passende aanduidingen van tijd en tijdsindeling. In deze dissertatie staat daarom de vraag centraal, hoe het onderwijs in historisch tijdsbesef in de basisschool verbeterd kan worden. De dissertatie bestaat uit vijf opeenvolgende studies over de ontwikkeling en het leren van historisch tijdsbesef van leerlingen, over een effectieve methodiek voor het onderwijs in historische tijdsbesef en over een professionaliseringsprogramma voor leraren.

Hoofdstuk 1 is een inleidend hoofdstuk met een overkoepelend theoretisch kader en de onderzoeksvragen. Vanuit het perspectief van onderwijs, werd historisch tijdsbesef geoperationaliseerd in vijf doelen:
1. Toepassen van het vocabulaire van tijd;
2. In chronologische volgorde plaatsen van historische verschijnselen en tijdvakken;
3. Gebruiken van de tijdbalk om historische verschijnselen in de tijd te plaatsen;
4. Herkennen en gebruiken van kenmerkende aspecten van tijdvakken;
5. Herkennen en benoemen van continuïteit en verandering binnen en tussen tijdvakken.

Studies over de ontwikkeling van historisch tijdsbesef bij leerlingen, werden lange tijd gedomineerd door de facetheorie van Piaget, waarin de ontwikkeling van historisch tijdsbesef werd verbonden met natuurlijke rijping. Vanuit deze theorie zouden leerlingen eerst klok- en kalendertijd moeten beheersen, voordat ze, op ongeveer 11-jarige leeftijd, historische tijd zouden kunnen begrijpen. Recentere studies tonen echter aan, dat leerlingen vanaf de leeftijd van 5 jaar al een basaal historisch tijdsbesef kunnen ontwikkelen en dat de ontwikkeling daarvan door onderwijs kan worden gestimuleerd. Engelse scholen sluiten hierbij aan, met een start van geschiedenisonderwijs in year 1, bij leerlingen van 5 jaar. In Nederland daarentegen, start het geschiedenisonderwijs op de meeste scholen pas als leerlingen ongeveer 9 jaar zijn.

Ondanks het feit dat er maar weinig studies beschikbaar zijn over effectieve manieren om historisch tijdsbesef te onderwijzen, laten verschillende studies zien dat tijdbalken, afbeeldingen en verhalen effectieve materialen zijn om het historisch tijdsbesef van leerlingen
te stimuleren. Op basis van onder andere deze inzichten is Tijdwis ontwikkeld, een methodiek waarmee het historisch tijdsbesef van leerlingen kan worden bevorderd. In de context van dit proefschrift is Tijdwis geïmplementeerd en geëvalueerd. Voor de invoering van de nieuwe aanpak van Tijdwis was professionalisering van leraren nodig. Volgens literatuur over professionalisering van leraren is het belangrijk aandacht te hebben voor de verschillende componenten van professionaliseringsprogramma’s, zoals ontwerpprinicipes, verandering van overtuigingen en attitudes van leraren; het vergroten van kennis en vaardigheden; en veranderingen in het leerkrachtgedrag. Al deze componenten samen zouden moeten leiden tot betere resultaten van leerlingen. Daarnaast is het van belang dat leraren worden ondersteund met middelen om een nieuwe aanpak in hun klas in te voeren, zoals richtlijnen, didactische strategieën, en inzichten en achtergrondkennis over het leren van leerlingen en de vakinhoud.

De hoofdvraag van deze dissertatie is: “Hoe kan het historisch tijdsbesef van leerlingen in de basisschool worden verbeterd?” Deze hoofdvraag is onderzocht door middel van vijf deelvragen:

1. Hoe komt historisch tijdsbesef aan bod in het curriculum van Nederlandse basisscholen, in vergelijking met het Engelse curriculum?
2. Hoe presteren Nederlandse leerlingen van 6 tot 12 jaar met betrekking tot historisch tijdsbesef?
3. Welke typen van problemen, gerelateerd aan de doelen van historisch tijdsbesef, komen voor in het redeneren van Nederlandse leerlingen bij het in de tijd plaatsen van historische verschijnselen?
4. Wat zijn effecten van een interventie met een nieuwe onderwijsaanpak, Tijdwis, op het historisch tijdsbesef van leerlingen?
5. Welke componenten zijn effectief in een professionaliseringsprogramma voor het verbeteren van het tijdsbesef van basisschoolleerlingen?

Deze onderzoeksvragen werden beantwoord in de hoofdstukken 2 t/m 6.

In Hoofdstuk 2 wordt het Nederlandse geschiedeniscurriculum met betrekking tot historisch tijdsbesef geanalyseerd en vergeleken met het Engelse curriculum. Voor de vergelijking met het Engelse curriculum is gekozen vanwege het feit dat het geschiedenisonderwijs in Engeland eerder start, met jongere leerlingen, dan in Nederland.

Met behulp van het model van het curriculaire spinneweb werden de beoogde en uitgevoerde basisschoolcurricula voor geschiedenis geanalyseerd op basis van curriculumdocumenten, vragenlijsten en interviews met leraren, lerarenopleiders en curriculumexperts. Belangrijke aspecten van historisch tijdsbesef, zoals het toepassen van het vocabulaire van tijd; het gebruiken van de tijdbalk; het herkennen en benoemen van kenmerken van tijdvakken en het onderscheiden van continuïteit en verandering, bleken aanwezig te zijn in de doelen van de beoogde curricula in beide landen. Hoewel het curriculum in Engeland vroeger begint, lijkt de episodische structuur van het curriculum niet erg behulpzaam voor de ondersteuning van het historisch tijdsbesef van leerlingen. In Nederland worden de tien tijdvakken meestal in chronologische volgorde onderwezen, maar leraren gaven aan, dat zij nauwelijks expliciet aandacht besteedden aan de jaartallen of de volgorde van de tijdvakken. In beide landen gebruikt een meerderheid van de leraren geen tijdbalken om leerlingen te leren gebeurtenissen, personen en veranderingen in de tijd te plaatsen. Verder betrekken leraren hun leerlingen nauwelijks in leeractiviteiten met betrekking tot continuïteit.
en verandering binnen en tussen tijdvakken. Ten slotte worden in beide landen de vorderingen van basisschoolleerlingen met betrekking tot historisch tijdsbesef nauwelijks getoetst. Geconcludeerd kan worden dat er aanleiding is om het onderwijs in historisch tijdsbesef te verbeteren en het hoofdstuk besluit met enkele suggesties om dit te verwezenlijken.

In hoofdstuk 3 staat het meten van de ontwikkeling van het historisch tijdsbesef bij leerlingen in het basisonderwijs centraal. Hiertoe is een model ontwikkeld met drie ontwikkelingsfasen: ontluikend, aanvankelijk en voortgezet historisch tijdsbesef. Het model beschrijft de ontwikkeling van leerlingen voor de vijf doelen van historisch tijdsbesef (zie Hoofdstuk 1). Deze doelen zijn beschreven in toenemende moeilijkheid en abstractie. Zo ontwikkelt het gebruik van tijd en tijdsaanduidingen zich bijvoorbeeld van brede, algemene aanduidingen, zoals 'lang geleden', naar het gebruik van jaartallen en namen van tijdvakken. Het herkennen van kenmerken van tijdvakken ontwikkelt zich van concrete kenmerken, zoals vervoer of bouwstijlen naar meer abstracte economische en politieke kenmerken. Gebaseerd op dit model is een meetinstrument ontwikkeld met meerkeuzevragen bij iedere fase, om de prestaties van leerlingen van 6 tot 12 jaar te onderzoeken. Na een consultatie van toetsdeskundigen, hardop-denken-interviews met leerlingen en een pilot met het instrument in een basisschool, is de toets afgenomen bij 1457 leerlingen van de groepen 3 t/m 8 van zeven Nederlandse basisscholen. De data-analyse liet zien dat het percentage correcte antwoorden per leerjaar oploopt en dat leerlingen in hogere groepen significant beter presteren dan leerlingen in lagere groepen. In alle groepen blijkt er ruimte voor verbetering te zijn, vooral in de groepen 3 t/m 5 (6-9 jaar), waar leerlingen nauwelijks onderwijs in historisch tijdsbesef krijgen. Maar ook in de groepen 7 en 8 (10-12 jaar), kunnen leerlingen nog groeien in de fase van voorgezet historisch tijdsbesef met betrekking tot het begrijpen van het verband tussen jaartallen en eeuwen, het plaatsen van gebeurtenissen op de tijdbalk en het vergelijken van historische verschijnselen binnen en tussen tijdvakken.

Hoofdstuk 4 beschrijft een kwalitatieve studie die is uitgevoerd om meer inzicht te krijgen in specifieke problemen van leerlingen bij de ontwikkeling van historisch tijdsbesef. Deze studie richt zich op problemen die zich voordoen in het redeneren van leerlingen bij het in de tijd plaatsen van historische verschijnselen. De context is het Nederlandse curriculum met tien tijdvakken en bijbehorende kenmerkende aspecten, dat is ingevoerd om leerlingen te ondersteunen bij hun oriëntatie in de tijd. Er zijn interviews afgenomen met 22 leerlingen van de groepen 3 t/m 8 (6-12 jaar), die taken uitvoerden waarin ze voorwerpen, situaties, gebeurtenissen, en personen in de tijd moesten plaatsen. Deze taken zijn gebaseerd op de doelen van historisch tijdsbesef, zoals gedefinieerd in hoofdstuk 3. De resultaten bevestigen problemen die in eerdere studies zijn beschreven, met betrekking tot het gebruik van aanduidingen voor tijd en tijdsindeling, het herkennen van kenmerken van tijdvakken en het redeneren vanuit presentisme bij het in chronologische volgorde plaatsen en vergelijken van historische verschijnselen uit verschillende tijdvakken. Naast deze problemen, zijn echter ook andere problemen geïdentificeerd, die verband houden met het Nederlandse curriculum met tien tijdvakken en kenmerkende aspecten. Deze problemen hebben betrekking op de namen en de iconen van de tien tijdvakken, die de leerlingen regelmatig in verwarring brachten, terwijl de kenmerkende aspecten nauwelijks bekend bleken te zijn.

De opbrengst van deze studie is een overzichtelijk schema, waarin de verschillende typen van problemen zijn gerelateerd aan de doelen van historisch tijdsbesef. Dit overzicht is
van belang voor leraren en lerarenopleiders en kan behulpzaam zijn bij de ontwikkeling van een onderwijsaanpak voor de verbetering van het historisch tijdsbesef bij leerlingen.

**Hoofdstuk 5** heeft betrekking op de effecten van een curriculuminterventie met Tijdwijs, een onderwijsaanpak die is ontwikkeld om het historisch tijdsbesef van leerlingen te verbeteren. Het belangrijkste doel van Tijdwijs is het systematisch aanleren van de kennis en vaardigheden die benoemd zijn als onderdeel van historisch tijdsbesef, door activerende leeractiviteiten met tijdbalken, verhalen en afbeeldingen. Deze studie, die is uitgevoerd met 16 leraren van de groepen 4 (7-8 jaar) en 7 (10-11 jaar), is de eerste curriculuminterventie met betrekking tot historisch tijdsbesef in het Nederlandse basisonderwijs. In een quasi-experimenteel design met een voor- en na-toets, zijn prestaties van leerlingen gemeten met het instrument dat is beschreven in hoofdstuk 4. Hierbij zijn kenmerken van leerlingen, zoals geslacht, leesniveau en het opleidingsniveau van de ouders, meegenomen als controlevaardigheden, naast de totale hoeveelheid tijd die werd besteed aan lessen geschiedenis. Multi-level analyses toonden aan dat, zowel voor groep 4 als voor groep 7, leerlingen in de experimentele conditie significant meer leerwinst boekten dan leerlingen in de controleconditie. Voor groep 4 bevestigde dit resultaat uitkomsten van eerder onderzoek, dat de ontwikkeling van historisch tijdsbesef kan worden gestimuleerd door onderwijs en dat dit vroeger kan plaatsvinden dan de leeftijd van 9 of 10 jaar, wanneer in de meeste landen hiermee wordt gestart. Voor groep 7 is geconcludeerd, dat systematisch onderwijs vanuit de doelen voor historisch tijdsbesef, met consequente aandacht voor tijdbalken, hogere leeruitkomsten voor leerlingen oplevert in vergelijking met een controleconditie, waarin leerlingen onderwijs kregen met methodes en waarin nauwelijks tijdbalken zijn gebruikt.

Deze positieve resultaten geven aan, dat historisch tijdsbesef van zowel jongere als oudere leerlingen verbeterd kan worden met leeractiviteiten die zijn gebaseerd op de doelen voor historisch tijdsbesef en op een consequent gebruik van tijdbalken in combinatie met verhalen en afbeeldingen als bronnen.

**Hoofdstuk 6** beschrijft welke componenten van de professionalisering van leraren hebben bijgedragen aan de leerwinst van de leerlingen. Deze professionalisering bestond uit een training en de interventie met Tijdwijs. Door middel van vragenlijsten, logboeken observaties en interviews zijn de ervaringen van leraren onderzocht met betrekking tot de ondersteuning van het professionaliseringssprogramma door richtlijnen, didactische strategieën, en inzichten en achtergrondkennis over het leren van leerlingen en de vakinhoud. Daarnaast is bij de leraren gekeken naar verandering in attitudes en overtuigingen, groei in kennis en vaardigheden, en veranderingen in het leerkrachtgedrag. Onderzocht is hoe deze elementen van het professionaliseringsprogramma hebben bijgedragen aan de hogere leeruitkomsten van leerlingen. De resultaten laten zien dat de leraren zich bij de invoering van Tijdwijs ondersteund voelden door de heldere richtlijnen, door de didactische strategieën voor de instructie, door de achtergrondkennis en door de aantrekkelijke materialen. In de vragenlijsten en interviews rapporteerden de leraren verandering in hun overtuigingen met betrekking tot het onderwijs in tijdsbesef, doordat zij hadden ervaren dat leerlingen meer over historisch tijdsbesef konden leren, dan zij hadden verwacht. De overtuiging dat de beheersing van klok- en kalendertijd een voorwaarde zou zijn voor het leren over historische tijd, bleek echter tamelijk hardnekkig. De observaties gaven aan dat de hoogste leerwinst werd geboekt door de leraren die het hoogst scoorden op het beoogde instructiegedrag, dat bestond uit systematisch aandacht besteden aan de vijf doelen voor historisch tijdsbesef. In een
vragenlijst die een jaar na de professionalisering werd afgenomen, rapporteerden de leraren dat ze zich nog steeds volledig bekwaam voelen in hun kennis en vaardigheden met betrekking tot het onderwijzen van historisch tijdsbesef, vooral in het gebruiken van de klassikale tijdbalk. Vooral praktische en gebruiksvriendelijke materialen bleken belangrijk te zijn voor de ondersteuning van leraren bij het invoeren van een nieuwe didactische aanpak.

**Hoofdstuk 7** bevat een samenvatting van de belangrijkste conclusies van de verschillende studies en suggesties voor vervolgonderzoek. Dit hoofdstuk is afgesloten met praktische aanbevelingen voor het onderwijs in historisch tijdsbesef voor leraren in basisscholen en lerarenopleidingen, voor schrijvers van methodes en voor beleidsmakers.

**Algemene conclusies**

Op basis van de bevindingen in dit proefschrift, kan een aantal conclusies worden getrokken ter beantwoording van de hoofdvraag: "Hoe kan het historisch tijdsbesef van leerlingen in de basisschool worden verbeterd?"

Ten eerste heeft deze dissertatie geleid tot een operationalisering van historisch tijdsbesef in een vijftal doelen en een model dat de ontwikkeling van tijdsbesef voor leerlingen in het basisonderwijs beschrijft in drie fasen. Op basis van dit model is een meetinstrument ontwikkeld dat kan worden gebruikt om inzicht te krijgen in prestaties van leerlingen met betrekking tot hun historisch tijdsbesef. Een toets met dit instrument met leerlingen van 6 tot 2 jaar liet zien dat het historisch tijdsbesef van deze leerlingen zich ontwikkelt volgens de beschreven fases en dat er ruimte voor verbetering is. Daarnaast konden conclusies worden getrokken met betrekking tot problemen, die leerlingen kunnen ervaren bij het uitvoeren van taken waarin zij historische verschijnselen in de tijd moeten plaatsen. Naast de gangbare problemen met betrekking tot het gebruik van het vocabulaire van tijd en tijdsaanduiding en presentistisch denken, bleken deze problemen ook samen te hangen met de namen en de iconen van de tijdvakken in het Nederlandse curriculum voor geschiedenis.

Ten tweede heeft de interventie met Tijdwijs in de groepen 4 en 7 aangetoond, dat historisch tijdsbesef kan worden verbeterd door systematisch aandacht te besteden aan het vocabulaire van de tijdvakken, het plaatsen van personen en gebeurtenissen op de tijdbalk en het vergelijken van tijdvakken, in combinatie met het gebruiken van verhalen en afbeeldingen.

Ten derde blijkt uit de deelstudie naar de effectiviteit van het professionaliserings programma, dat vooral de ondersteuning van leraren met een uitgebreide handleiding en aantrekkelijke materialen, zoals de klassikale tijdbalk en het verhalenboek, belangrijke factoren waren voor het succes van Tijdwijs.

**Discussie en suggesties voor vervolgonderzoek**

De discussie gaat in op enkele beperkingen van deze dissertatie, zoals de conceptualisering van historisch tijdsbesef, waarin geen aandacht is voor tijd als verschijnsel. Een andere beperking heeft betrekking op het meteinstrument, dat voornamelijk historische kennis toetst en waarvan de betrouwbaarheid aan de lage kant is. Vervolgonderzoek zou zich kunnen richten op een betrouwbare toetsing van kennis, vaardigheden en houdingen van leerlingen met betrekking tot hun historisch tijdsbesef.

Resultaten van deze dissertatie geven aan dat de ontwikkeling van historisch tijdsbesef bij leerlingen kan worden gestimuleerd door onderwijs, hetgeen succesvol bleek te zijn vanaf 47
een jonge leeftijd (7 - 8 jaar). Dit resultaat lijkt bij te dragen aan het weerleggen van de fasetheorie van Piaget, die lange tijd van invloed was op de overtuigingen van curriculumontwerpers en leraren, dat het onderwijs in historisch tijdsbesef niet kan starten voordat leerlingen minstens 9 jaar oud zijn. Desalniettemin is meer onderzoek nodig naar de vraag, in welke mate de ontwikkeling van historisch tijdsbesef bij leerlingen een proces van natuurlijke rijping en/of een leerproces is en welke binnen- en buitenschoolse factoren dit proces beïnvloeden. Verder zou longitudinaal onderzoek inzicht kunnen geven in hoeverre een vroeger start van het onderwijs in historische tijd een blijvend positieve invloed heeft op het historisch tijdsbesef van leerlingen in hogere groepen en in het voortgezet onderwijs.

De curriculuminterventie met Tijdwijs is, binnen de Nederlandse context, de eerste interventiestudie die effecten heeft getoetst van een onderwijsaanpak gericht op de verbetering van historisch tijdsbesef bij leerlingen. Er zijn positieve effecten op de leeruitkomsten van leerlingen gevonden, maar daarbij moet rekening worden gehouden met de beperking van het kleine aantal van 16, merendeels gemotiveerde deelnemende leraren. Daarnaast besteedden de meeste leraren van de groepen 7 extra tijd aan geschiedenis, omdat zij naast Tijdwijs, ook lessen gaven uit de geschiedenismethode. Grootschaliger vervolgonderzoek, ook in andere groepen van de basisschool, zou zich kunnen richten op een integratie van Tijdwijs in geschiedenismethodes of op de vraag in hoeverre Tijdwijslessen misschien de geschiedenismethode zouden kunnen vervangen.

De aanpak met Tijdwijs bevat vooral klassikale activiteiten. Het zou interessant zijn te onderzoeken wat effecten zijn van groepsoptdrachten, waarin leerlingen bijvoorbeeld aanduidingen van tijd en tijdsindeling gebruiken, of waarbij in groepen wordt gewerkt met het in chronologische volgorde plaatsen van afbeeldingen op tijdbalken. Dergelijk onderzoek zou zich ook kunnen richten op de effecten van ICT-applicaties met leeractiviteiten op tablets en smartphones of in een Virtual Reality omgeving. Mogelijke beperkingen van het professionaliseringsprogramma bij Tijdwijs kunnen zijn, dat in programma geen coaching of deelname van hele schoolteams is opgenomen; aspecten die in de literatuur worden genoemd als effectieve kenmerken van professionaliseringsprogramma’s. Vervolgonderzoek zou gericht kunnen worden op de effecten van Tijdwijs bij deelname van volledige teams van leraren met coaching-bijeenkomsten in scholen. In dergelijke sessies kan tevens meer aandacht worden besteed aan de gevonden problemen die leerlingen ervaren bij het plaatsen van historische verschijnselen, en die in het huidige programma weinig aan bod kwamen.

**Implicaties voor de praktijk**

Deze dissertatie heeft een aantal praktische instrumenten opgeleverd die kunnen worden toegepast door leraren in basisscholen en in lerarenopleidingen:

- een model met doelen en ontwikkelingsfasen voor de ontwikkeling van historisch tijdsbesef van leerlingen in het basisonderwijs;
- een instrument om de ontwikkeling van historisch tijdsbesef bij leerlingen in het basisonderwijs te toetsen;
- Tijdwijs, een onderwijsaanpak met materialen en een website;
- een professionaliseringsprogramma voor leraren gericht op de implementatie van Tijdwijs.

Leraren kunnen deze instrumenten gebruiken voor de ontwikkeling, uitvoering en evaluatie van lessen over historisch tijdsbesef in de groepen 3 tot en met 8. Voor lerarenopleiders kunnen deze instrumenten behulpzaam zijn bij de opleiding van studenten en bij voortgezet-
professionele ontwikkeling van schoolteams. Uitgevers van methodes kunnen de inzichten van deze dissertatie toepassen bij het ontwikkelen van geschiedenismethodes en on-line-materialen, niet alleen voor de groepen 5 tot en met 8, maar ook voor groep 3 en 4. Een aanbeveling voor beleidsmakers is om het kader van de tien tijdvakken met de kenmerkende aspecten te evalueren, rekening houdend met de in dit onderzoek gebleken problemen die leerlingen hiermee ervaren.

Tot slot kan deze dissertatie leraren en lerarenopleiders inspireren om het onderwijs in historisch tijdsbesef te verbeteren, zodat leerlingen beter in staat zijn om informatie die op hen afkomt in de tijd te plaatsen en maatschappelijke ontwikkelingen te duiden.
Marjan de Groot-Reuvekamp was born in ’s-Hertogenbosch, on January 7th, 1955. After secondary school, HBS-A, she studied to be a teacher in primary school at Pedagogische Academie, Mariënburg in ’s-Hertogenbosch. Between 1975 and 1989 she worked as a teacher in different schools for primary education, secondary education and schools for children with special needs. Alongside her work she studied German language (second degree) and history (first degree) at the Katholieke Leergangen in Tilburg, and in 1990 she completed her Master’s degree in history at the Rijksuniversiteit Utrecht.

Since 1992 Marjan is a teacher educator for initial teacher training, first at Avans, University for Applied Science in Breda (until 2006) and nowadays at Fontys University for Applied Science, School for Child Studies and Education in ’s-Hertogenbosch. In Breda she also was team manager and coordinator for internships in primary schools.

In ’s-Hertogenbosch she teaches history and pedagogy and she supervises bachelor and master research projects and students’ internships in primary schools. Furthermore, she takes part in an Erasmus+ project with colleagues from Fontys and English, Finnish and Palestinian universities to foster Practise Based Research in Palestine. Together with Cees van der Kooij, Marjan is author of a textbook on teaching history in primary education Geschiedenis & Samenleving. Kennisbasis inhoud en didactiek (Groningen: Noordhoff, 2009, 2013, 2016) which is widely used for teacher training in Dutch universities.

Marjan is an active member of the Association for Teachers in History and Civic Education in the Netherlands, for which she held various management positions. Until 2016 Marjan was President of EUROCLIO, the international association of national associations of history teachers, through which she gained experience in working with international projects and collaborating with international partners. She organized several national and international conferences for history educators.

In 2012, a grant of the Netherlands Organization for Scientific Research (NWO) enabled her to work 2 days a week on a PhD, on “The improvement of the understanding of historical time for primary school pupils” at the University of Amsterdam, of which the results are presented in this dissertation.
Als geschiedenisdocent op een Pabo merkte ik, dat leerlingen het vaak lastig vinden historische verschijnselen in de tijd te plaatsen. Historisch tijdsbesef is niet alleen een belangrijke basis binnen geschiedenisonderwijs, maar ook essentieel voor de algemene ontwikkeling van kinderen. Door het plaatsen van historische verschijnselen in de tijd en door deze met elkaar en met de huidige tijd te vergelijken leren kinderen het verleden en het heden begrijpen. Met de voortdurende beschikbaarheid van informatie over hedendaagse en historische gebeurtenissen wordt de ontwikkeling van historisch tijdsbesef binnen het geschiedenisonderwijs steeds belangrijker. Door hier onderzoek naar te doen, hoop ik een bijdrage te kunnen leveren aan verbetering van het onderwijs in historisch tijdsbesef op de basisschool en de lerarenopleiding en tevens pabo-studenten, basischoolleraren en leerlingen te enthousiasmeren voor betere leeropbrengsten in het geschiedenisonderwijs. Ik was dan ook heel blij met de promotiebeurs voor leraren van NWO, waarmee ik vijf jaar geleden vol enthousiasme begon aan dit promotieonderzoek.

Dit onderzoek was niet mogelijk geweest zonder de steun van familie, vrienden, collega’s en van mijn begeleiders. Allereerst wil ik mijn promotor en copromotor bedanken: Carla en Anje. Jullie waren de fijnste begeleiders die ik me kon wensen. We hadden ongeveer maandelijks gesprekken over het onderzoek en Carla was steeds bereid hiervoor naar ’s-Hertogenbosch te komen. Jullie vulden elkaar perfect aan in de feedback die jullie gaven: Carla als expert op het gebied van geschiedenis en didactiek, Anje met haar kennis van leren en innoveren en beiden met veel kennis en ervaring met betrekking tot academisch onderzoek. Jullie wisten op ieder moment tijd te maken voor feedback, waardoor de teksten van het proefschrift duidelijker en beter werden. Voor mij waren jullie de ideale begeleiders, met niet alleen de nodige deskundigheid, maar ook met warmte en begrip. Ik zal onze gesprekken op de derde verdieping van de pabo missen.

Essentieel voor de uitvoering van dit onderzoek waren de bijdragen van experts in theorye en praktijk van geschiedenis in het basisonderwijs. Mijn dank gaat uit naar vertegenwoordigers instituten voor leerplanontwikkeling en toetsing, lerarenopleiders en leraren in Engeland en Nederland, die tijd maakten voor deelname aan enquêtes en interviews. Voor de interviews gaat mijn dank uit naar Alan, Chris, Edward, Hilary, Jerome, Michael, Michelle, Philippa, Sarah, Sue, Tim en Tracy (in Engeland) en Annemiek, Arie, Cees, Danny, Edward, Francien, Henk, Monique K., Monique R., Peter, Ronald, Theo en Wappie (in Nederland). Penelope Harnett ben ik erkentelijk, omdat ze me wegwijs maakte in haar netwerk van “primary history” in Engeland en Paul, Koen en mij welkom heette in haar huis tijdens de rondreis langs Engelse experts en basisscholen. Aan deze reis met bestemmingen als Liverpool, Lincoln en Bristol, bewaar ik warme herinneringen. Dat geldt ook voor de reis naar Tatarstan, waar ik, dankzij de uitnodiging van Marat Gibatdinov, een van de eerste presentaties over het onderzoek mocht geven op een pedagogische hogeschool in Elabuga. Er zouden nog vele presentaties volgen, onder andere in Macedonië, op Cyprus, in Porto, in Murcia en Dublin.

In dit dankwoord wil ik ook graag de opleidingsscholen van het partnerschap van Fontys Hogeschool voor Kind en Educatie (FHKE) bedanken voor hun medewerking aan het afnemen van de toets “historisch tijdsbesef”: de Angelaschool, de Empel, de Evenaar, de Fonkeling, De Hoeft, De Kwartiermaker, ’t Maxend, de Meander, Noorderlick, Olof Palme, De Overlaet, de Theresiaschool, de Toermalijn, ’t Ven, de Wieken en ’t Wikveld. Bij de afname van
DANKWOORD

dezelfde toetsen kreeg ik hulp van een aantal gemotiveerde studenten: Alex, Annemarie, Bas, Cynthia, Denise, Friso, Koen, Loes, Marloes, Nioor, Sandra, Sophie, Simone, Suzan en Tessa, heel veel dank, dat jullie de afname van de toetsen bij leerlingen van jullie stagescholen mogelijk maakten. Ook de 22 leerlingen van de Olof Palme en ‘t Wikveld wil ik bedanken voor hun enthousiaste deelname aan de interviews over historisch tijdbesef. In het bijzonder wil ik op deze plaats de leraren bedanken die na het volgen van een training, een half jaar lang in hun groep Tijdswijslessen hebben gegeven en daarnaast tijd maakten voor het invullen van logboeken en enquêtes en voor observaties en interviews: Annie, Christel, Cindy, Elise, Elly, Eugene (†), Harry, Janneke, Mandy, Marieke, Mariëlle, Cindy, Mirjam, Monique, Rianne, Riet, Vera en Yvonne: super veel dank voor jullie inzet en betrokkenheid.


Met veel plezier nam ik een aantal keren per jaar deel aan bijeenkomsten van de Nederlandse-Vlaamse intervisiegroep van onderzoekers in geschieddidactisch onderzoek aan de Universiteit van Amsterdam, onder de deskundige leiding van Carla en Jannet. Dank aan alle deelnemers van deze groep voor de leerzame en gezellige intervisiebijeenkomsten in Amsterdam, Leuven en Gent.

Voor het ontwerp van de voorkant van het proefschrift kreeg ik hulp van Peter Vennema, die ook heeft geassisteerd bij de vormgeving van Tijdwijs en van de website, www.historischtijdsbesef.nl. Voor het ontwerpen van de tijdbalken van Tijdwijs wil ik Alex Box bedanken. Jan van den Berg ben ik zeer erkentelijk voor zijn taaladviezen.

En ‘last but not least’ het thuisfront, dat mij in de afgelopen jaren vooral aantrok achter de laptop. Paul, Koen, Niels, Tiffany en Martijn: dank voor jullie begrip als ik weer eens te weinig tijd had. Voor jullie en voor Finn, en binnenkort zijn broertje, hoop ik er ruim vaker te zijn. Desondanks bleven jullie steeds belangstellend naar het onderzoek. Martijn stond altijd voor me klaar als ik een computerprobleem had, Tiffany adviseerde me bij het maken van de enquête en de interviewvragen voor leraren en Paul en Koen reisden met me mee voor de dataverzameling in Engeland en presentaties in Tatarstan en op Cyprus.

Mijn beide ouders wil ik bedanken, omdat zij hebben bijgedragen aan wie ik nu ben. Helaas zijn zij overleden voordat het proefschrift was voltooid, maar wat zouden ze trots geweest zijn. Mijn laatste woord van dank is voor Paul: jij hebt me tijdens deze reis letterlijk en figuurlijk begeleid. Daarnaast hield je het huishouden draaiende, zorgde je dat er altijd een lekkere maaltijd klaarstond als ik thuiskwam en bewaakte je dat ik in alle rust kon werken. Ik ben dankbaar voor jouw niet aflatende vertrouwen en je onvoorwaardelijke liefde en steun.