Enhancing historical reasoning: a key topic in Dutch research on history education

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Abstract—The number of Dutch studies on the learning and teaching of history has increased substantially in the last ten years. Enhancing historical reasoning is a key topic in Dutch research on history education. This paper discusses recent and current empirical studies in the Netherlands on methods to enhance historical reasoning in the classroom. These studies show that historical reasoning can be enhanced through the (collaborative) construction of multimodal representations, document-based writing tasks and the use of certain teacher strategies in whole-class discussions. Conclusions are drawn for further empirical research and instructional practice.


Introduction

Since the 1990s there has been an increased interest from (educational) researchers in the subject of the learning and teaching of history (Carretero & Voss, 1994). Especially in the United States and the United Kingdom various studies have appeared on this topic. These studies have been conducted from a predominantly cognitive perspective on learning, and focus, for example, on expert-novice comparisons, reasoning with historical documents and giving historical explanations. This line of research has been broadened with research from a socio-cultural perspective (eg, Barton, 2001; Wertsch & Rozin, 1998). Until recently, substantial empirical research on the learning and teaching of history was completely lacking in the Netherlands. In teacher training institutes history teacher trainers were not facilitated to do research and educational researchers mainly focused on general educational topics or on other domains, such as science, mathematics or languages. Nowadays, it's a different picture. Over the last ten years several studies have been conducted or started. Dutch studies on history learning focus on the following main questions: How do students understand and reason about history? What are effective tasks and teaching methods to enhance the learning of history? Which competences do history teachers need to teach history and how can these be developed? What are the goals of history education and what are the implications for the organization of the history curriculum?

There are several studies in the Netherlands that focus on how students understand and reason about history. Albert Logtenberg conducts a PhD study (University of Amsterdam) on the asking of historical questions as a component of students’ historical reasoning. What kind of historical questions do students ask, what are the underlying cognitive and affective processes of questioning and how is questioning related to prior knowledge, interest and text genre? Also at the University of Amsterdam, Marc Kropman investigates the extent to which students in secondary education possess shared historical knowledge and shared considerations on the significance of historical phenomena in the Dutch past. Recently, Geertje Savenie started her PhD study (Erasmus University Rotterdam) about primary and secondary school students’ entrance narratives about heritage and how these narratives transform during learning activities about heritage.

Several studies have focused on the development and evaluation of teaching methods and competences of history teachers to enhance the learning of history, i.e. praxis and pedagogy (e.g., Van Drie, 2005; Prangsma, 2007). This theme is still present in current studies. In a design research Harry Havekes (Radboud University Nijmegen), for example, investigates the potential of Active Historical Thinking Assignments. Marcel van Riessen (University of Amsterdam) focuses on making historical thinking in the classroom more visible and on the use of rubrics to evaluate students’ progression in historical thinking. Next to empirical studies, there is also theoretical research. Arie Wilschut (Amsterdam University of Professional Education) studies a fundamental but neglected component of learning history: historical time awareness. According to Wilschut, the most central aspect of historical thinking is that it deals with bridging the gap of time in a specific way (Wilschut, 2009). Central questions of his study are: What exactly is modern historical time awareness? What is the relation between that kind of time awareness and our kind of society? How can historical time awareness be taught and learned?

Whereas in most countries the majority of empirical studies on the learning and teaching of history focuses on students’ conceptions and understandings, many studies in the Netherlands focus on teaching methods, especially teaching methods to enhance historical thinking and reasoning. In this paper we address this key topic in Dutch research.

In the following sections we will first explore the construct of historical reasoning and present the framework we use to study historical reasoning in the classroom. Second, we discuss recent and current studies on teaching methods to enhance students’ historical reasoning. An important assumption underlying all these studies is that discourse in small group work and whole-class discussions contributes to the development of historical understanding and historical reasoning ability, provided that students are actively engaged in collaborative historical reasoning. We present three examples of teaching methods that promote collaborative historical reasoning: the construction of multimodal representations, document-based writing tasks and the use of teacher strategies to promote collaborative historical reasoning in whole-class discussions.

Historical reasoning

Historical reasoning is a central concept in our research work. The term historical reasoning emphasises the activity of students when learning history and the fact that students do not only acquire knowledge of the past, but also have to use this knowledge for interpreting phenomena from the past and the present (Van Drie & Van Boxtel, 2008).
This emphasis on activity and use of knowledge is in line with socio-constructivist theories of learning, which stress that knowledge is actively constructed and mediated by the use of language and tools (Brown, Collins, & Duguid, 1989). Historical reasoning becomes visible in verbally explicated reasoning, in speech or in writing. Reasoning reflects a transformation of knowledge and information. New relations are created through giving examples, using analogies, reformulating or combination of information. Only through such transformations new and coherent ‘stories’ (interpretations or explanations) can be constructed.

In our studies on history learning in secondary education we needed a framework that would enable us to analyse students’ reasoning both in writing and speaking, for example, in collaborative learning situations. We wanted to create a framework that would allow us to describe progression in both reasoning and learning in history, as well as to identify the effects of different learning tasks and learning tools. From the available research literature, we identified components of historical reasoning in order to use them as a starting-point for the analysis of our data. We subsequently refined and extended our initial set of components through analysing the quality of historical reasoning in student essays, chat discussions in an electronic learning environment, small group discussions, and whole-class discussions. Based upon a review of empirical literature on students’ thinking and reasoning about history and our own studies, we constructed a theoretical framework for analysing historical reasoning (Van Drie & Van Boxtel, 2008).

The framework consists of six components: asking historical questions, using sources, contextualisation, argumentation, using substantive concepts, and using meta-concepts.

We define historical reasoning in the context of history education as an activity in which a person organises information about the past in order to describe, compare, and/or explain historical phenomena. In doing this, he or she asks historical questions, contextualises, makes use of substantive and meta-concepts of history, and supports proposed claims with arguments based on evidence from sources that give information about the past. These components often co-occur in a reasoning, but are not necessarily all present at the same time. In the example presented in Figure 1, historical reasoning occurs in the asking and answering of an explanatory question when discussing a picture of medieval peasants and knights and a castle in the background (Van Boxtel, 2002). Together with some students (12 years of age) the history teacher constructs an explanation for the fact that many peasants in the Middle Ages were tied to the landlord’s land, cultivated this land and paid the lord some form of rent. In the process of building this explanation, the teacher and students use historical concepts, such as serfs and nobility. In the previous lesson the students explored these concepts in a preparatory group task. Later in the same whole-class discussion (not in the transcript) the teacher situates the manorial system within the broader context of an agricultural society in which money is hardly used.

The quality of students’ historical reasoning is shaped by their historical knowledge, skills, and meta-historical insights (Van Drie & Van Boxtel, 2008; Van Boxtel & Van Drie, 2008). Knowledge of historical concepts and chronology, for example, enables students to situate statements, objects, texts or pictures about or from the past in the context of time, historical location, general phenomena or particular events in order to make them more intelligible. The ability to use discipline-based heuristics for explaining historical phenomena (e.g., discerning immediate and indirect causes) can bring historical reasoning on a higher level. Meta-historical insights, such as the awareness that the past is different from our present times, promote contextualised thinking.

The framework of historical reasoning is not only helpful to analyse the quality of historical reasoning in history classrooms, but also helps to guide our research. Our review on the components of historical reasoning made clear that relatively little is known about some of the components, for example, asking of historical questions and contextualisation. We try to deepen our understanding of these components, for example, by investigating the kind of knowledge and strategies students actually use when asked to contextualise an unknown historical picture or document (Van Boxtel & Van Drie, 2004). In addition, Logtenberg studies the cognitive and motivational processes underlying the asking of historical questions when students read a text that introduces a historical topic.
Dialogue as a means to enhance historical reasoning

Lemke (1990) stated that students need to ‘talk science’ in order to learn science. He believes that it is the specific use of science concepts in communication such as the discussion of hypotheses, essay writing, reporting experimental results and asking questions that is most important. We think that the same holds for the learning of history. Students should be actively engaged in the asking of historical questions, in explaining, comparing and contextualising, and in using substantive and meta-historical concepts. In dialogue students have to make explicit their thoughts and ideas. When thinking is made explicit, it is open to questioning and discussion, and can thus stimulate students to consider alternative views and arguments. In this way discussion can enhance the quality of reasoning (cf. Kuhn, Shaw, & Felton, 1997). We believe that in history classrooms students should have ample and various opportunities to reason about the past. How can historical reasoning in the classroom be elicited and promoted? What are powerful tasks to engage students in historical reasoning? In the following sections we present three examples of methods that are promising considering the results of some Dutch studies. First, we discuss a study of Maaike Prangsma in which students were asked to co-construct multimodal representations of information about the past. Second, we discuss a study of Jannet van Drie on collaborative document-based writing in a computer learning environment. Lastly, we present a recently started study on teaching methods to enhance collaborative historical reasoning in whole-class discussions.

Collaborative learning tasks: co-construction of multimodal representations

Modern schoolbooks are full of pictures, tables, graphs, and diagrams, in addition to texts. Visual representations can support memory and concretisation in the acquisition of historical knowledge. Mostly visual representations are presented to students. In Belgium, Vielfont, Goegebeur and Van Looy (2008) are currently conducting a study in which they try to develop student teachers’ historical competence through the use of graphical representational instruments, such as a history compass and a history’s methodological barometer. However, also the construction of visual representations is considered valuable for learning, for it focuses on central concepts and relations, makes knowledge gaps visible and can consequently stimulate the process of elaboration (Cox, 1999). Representations can be constructed both individually and collaboratively. Van Drie & Van Boxtel (2003) showed that students who constructed a concept-map on communism in pairs were able to give more complete and accurate descriptions of the concepts in a post-test, compared to students who constructed a concept-map individually. The collaborative construction of a representation can stimulate elaborate discussions between students, since students have to verbalise their ideas and negotiate the meaning and relations of information represented. The representation that is dynamically constructed functions both as a cognitive thinking tool and as a communicative tool.

Maaike Prangsma (2007) studied the effects of group tasks in which students construct a visual representation on the use of historical concepts when describing a historical development. We consider the use of disciplinary concepts as an important component of historical reasoning. Historical concepts are tools to question, describe, analyse, synthesise and discuss historical phenomena. However, many students have difficulties with understanding the abstract concepts in history and using these concepts to describe, explain or compare historical phenomena. Pictures can make developments, structures, temporal, and causal relations visible. We expected that when students are asked to self-construct such pictures using some given historical concepts, this task would result in student discourse in which students actively use historical concepts to describe and interpret historical developments. Prangsma investigated the effects of tasks in which students were asked to construct a multimodal representation. Multimodal representations combine textual information (propositional representations) with schematic or depictive visualisations (visual representations). The participants were 143 students aged 12 to 14 from six different pre-vocational secondary schools. In a dyad the students constructed a process diagram in the form of a storyboard about the decline of the Roman Empire (see Figure 2), a network chart incorporating pictures showing the effects of the fall of the Western Roman Empire, a structure diagram where students labelled an image about manorialism, and cartograms showing the spread of Christianity and Islam. Dialogue protocols of the taped student conversations were analysed for the use of historical concepts and content utterances about historical phenomena and relations.

The most powerful task in terms of talk about and with historical concepts was the task in which students were asked to construct a kind of storyboard about the disappearance of the Roman Empire. Preparation for the task consisted of reading a text about the decline of the Roman Empire. Then, they had to select appropriate drawings out of a whole set of drawings and to put them in a logical (chronological) sequence. Students were asked to connect a historical concept to each drawing and write captions that together tell a story of how the Roman empire disappeared. In this way they constructed a multimodal representation of the historical development.
Figure 2. Task sheet with model answer for the collaborative learning task in which students had to order and describe pictures in a process diagram about the disappearance of the Western Roman Empire.

<table>
<thead>
<tr>
<th>Part 1 the Roman empire disappears</th>
</tr>
</thead>
<tbody>
<tr>
<td>What were things like around the year 400? Concepts that go with this period.</td>
</tr>
<tr>
<td>1. Antiquity</td>
</tr>
<tr>
<td>2. Roman army</td>
</tr>
<tr>
<td>3. Emperor</td>
</tr>
<tr>
<td>Concept: Transmigrating people</td>
</tr>
<tr>
<td>Concept: Split of the Roman empire</td>
</tr>
<tr>
<td>Concept: Western empire was split into Western and Eastern parts</td>
</tr>
<tr>
<td>Concept: Western empire gone</td>
</tr>
<tr>
<td>Concept: The emperor of the Western part is deposed, the Western Roman empire disappears</td>
</tr>
<tr>
<td>Concept: The Romans leave</td>
</tr>
</tbody>
</table>

The Roman empire disappeared because the Western part had weak administration and because Germanic people conquered Rome

Ten dyads were selected from the final sample for discourse analyses. The focus of the analyses was on the part of the discourse that dealt with domain-specific content. The total number of concepts used within the whole set of content utterances was tabulated, as well as the total number of different concepts. One utterance could contain more than one concept. The discourse during the construction of the storyboard task contained the most historical concepts. Furthermore, the task was most succesful in eliciting talk about a wider variety of concepts within the task topic.

Significant positive correlations were found between the post-test result and the total number of concepts used. This confirms our premise that more discussion of domain-specific concepts or talk with history concepts is positively related to learning outcomes.

Collaborative learning tasks: document-based writing

Writing can be considered to be an important means to engage students in historical reasoning (Counsell, 1997; Leinhardt & McCarthy Young, 1998; Husbands, 1996). Several studies showed that writing tasks engage students in historical reasoning, since students are actively engaged in the subject and explore relations among ideas, which contributes to the construction of knowledge and the development of deep understanding (Klein, 1999; Boscolo & Mason, 2001). Especially writing based upon the study of multiple documents can enhance historical reasoning, since students not only have to reason with the information presented in the documents, but also need to reason about the documents by identifying different interpretations and considering the trustworthiness of the sources (cf. Rouet, Britt, Mason, & Perfetti, 1996; Voss & Wiley, 1997). In addition, several authors consider collaboration on a writing task an effective strategy, since it makes ideas and writing processes more available for feedback and critical reflection (e.g., Gere & Stevens, 1989; Erkens, Jaspers, Prangsma, & Kanselaar, 2005).

Van Drie (2005) conducted a PhD-study on the question of how to promote historical reasoning in a document-based writing task that is presented in a computer learning environment. This study was based on the idea that historical reasoning can be enhanced both by collaboration and writing. In this study students had to collaboratively study several historical documents and co-author an essay. The students conducted this task in a computer learning environment. This environment provided the dyads with multiple historical sources and the possibility to write an essay together. Communication took place via chat (the students worked in separate rooms each behind their own computer). The task was about the changes in the behaviour of the youth in 1960's in the Netherlands. The students (pre-university education, 16-17 years of age) worked about 5 hours on the task.

Van Drie carried out two experimental studies. The aim of the first study was to investigate the appearance of historical reasoning of students working on a historical inquiry task in the computer-supported collaborative learning environment. She also wanted to gain insight into the question of whether the type of inquiry task affects the appearance and quality of historical reasoning in student discourse while performing the task. She compared the effects of using an explanatory question versus an evaluative question. Results showed that the task elicited historical reasoning, however this was only a small proportion of all discourse (13%) in the chat, since most of the talk was about procedures. The comparison between the explanatory and evaluative question revealed that the students who worked on the evaluative question showed more historical reasoning in the chats and produced an essay showing a more thorough historical reasoning. It was thus concluded that especially evaluative inquiry questions are powerful to enhance historical reasoning in essay writing (see also Van Drie, Van Boxtel & Van der Linden, 2006).

In the second study, three representational tools were added to the computer environment to provoke and support historical reasoning. In an experimental study Van Drie studied the effects of using schematic representations in which students can organise information from the historical sources. In one condition students were asked to use a tool to construct an argumentative diagram before writing the essay. In such a diagram a point of view and arguments pro and contra can be graphically represented. Furthermore, students can refer to the source from which the argument or the example derives (see Figure 3). In the List condition students simply listed arguments pro and arguments contra. In the Matrix...
condition students could use a matrix tool to characterise and organise historical changes. In the matrix students could summarise and label processes of change and continuity (revolutionary change or not; cultural, political, or economic changes). The analyses showed that using different types of representational formats did not result in differences in the overall quality of historical reasoning in the essay, nor in the outcomes on a post test. However, there were differences found in the chat-dialogue. For example, Matrix users talked more about historical changes, whereas Diagram users were more focused on the balance in their argumentation. A questionnaire in which students were asked to evaluated the tools revealed that they found the tools very useful. Although a computer-supportive learning environment has several advantages, the construction of a diagram or a matrix to organise information from sources, can, of course, also be done by using paper and pencil (see also Van Drie, Van Boxtel, Jaspers, & Kanselaar, 2005; Van Drie, & Van Boxtel, 2004).

Collaborative historical reasoning in whole-class discussions

Thus far we have focused on collaborative reasoning in groups of students. However, historical reasoning can also be elicited in dialogue with the teacher. Van Boxtel (2002) compared small group reasoning and reasoning in teacher-guided whole-class discussions. Four lessons of small group work and four whole-class discussions that were part of a course on the Middle Ages were analysed. Two classes of students (12 years of age; 32 students and 24 students) and one teacher participated. In the class discussions the teacher did most of talking (about 80%), the students were actively participating. However, the teacher did not talk for a long time. In the student dialogues there was some asymmetry in participation, although not very high. Although the class discussions did not reflect a shared control and an equal participation of students, they were characterized by sharing knowledge, co-construction of meaning, and a shared responsibility for learning. A general comparison between the small group and the whole-class discussions showed that in the whole class discussions there was more focus on the content and less on procedural aspects and less social talk. The amount of historical reasoning with concepts was about as much in the small groups as in the whole-class discussions, however other types of reasoning occurred. The whole-class discussions showed more use of abstract concepts, more explanation, more contextualisation, and more talk about changes and continuity, however less descriptions. It can thus be concluded that in small group discussions students have more opportunity to verbalise their ideas and to use the language of history, and that in whole-class discussions a higher level of historical reasoning in terms of the degree of explaining, contextualisation, use of abstract concepts, and sound reasoning can be reached.

These kind of whole-class discussions, however, implies that students act as active participants in the discussion, and that it is not the teacher who does all the talking. This involves amongst others that students make substantive contributions to the discussion, express their thoughts, develop lines of reasoning, initiate, and ask questions. Students do not only respond to the teacher, but also to each other. In a small-scale study we explored the extent to which teachers foster collaborative historical reasoning in whole-class discussions and what strategies they use to promote this (Van Drie & Van Boxtel, in preparation). The detailed analyses of four whole-class discussions showed differences in the extent to which the teachers succeeded in provoking collaborative historical reasoning. This seemed to be related to the strategies the teachers used and the role of task at hand.

First, the teacher can foster collaborative historical reasoning by using various strategies. The purpose of the questions the teacher asks is not to evaluate the students, but to elicit students’ thinking and to make this explicit and open for further discussion. The teacher can use questions to challenge the students to elaborate on previous ideas, to provide arguments, and to engage them in historical reasoning by introducing different components of historical reasoning or deepening reasoning on one specific component. The questions used are open questions and require long student answers. The feedback the teacher provides should preferably not be an explicit evaluation (for that stops the
difficult to assess, and it requires good instruction materials and learning tasks. A lot of a writing task, in small group work, or as a point of reference in whole-class discussions. Visual representations can be used to organise information from multiple documents in visual or multimodal representations may sustain the reasoning process. For example, and in dialogue with the teacher. In all these three ways, the use or construction of for students to practice historical reasoning, in writing, in dialogue with other students, and in the establishment of shared knowledge. As mentioned before, such teacher-guided discussions allow for attaining a higher level of reasoning compared to discussions in small student groups. As a result, whole-class discussions may in turn provide students with a model of historical reasoning and collaborative talk, which they can adopt in subsequent work in small groups (Elbers & Streefland, 2000).

Second, the task seems to have an important role in provoking collaborative historical reasoning. Especially tasks that are open-ended and ask for reasoned judgement seem to have potential to provoke collaborative reasoning in whole-class discussions. This is in line with earlier findings we described on the power of evaluative questions to provoke historical reasoning. In addition, the extent to which students have the opportunity to explore the topic or problem at hand before participating in a whole-class discussion, seems to be an important factor. Combining group work with whole-class discussions in a mutually reinforcing way can therefore be a fruitful approach. Husbands (1996) already suggested that a class discussion in which students actively participate and share responsibility for the construction of understanding, can be best prepared by small group work. Subsequent whole-class discussions then support processes of consensus building, and the establishment of shared knowledge. As mentioned before, such teacher-guided discussions allow for attaining a higher level of reasoning compared to discussions in small student groups. As a result, whole-class discussions may in turn provide students with a model of historical reasoning and collaborative talk, which they can adopt in subsequent work in small groups (Elbers & Streefland, 2000).

Conclusion
Historical reasoning can be considered a key topic in Dutch research on history learning. The central question of the effects of different tasks on students’ historical reasoning provides valuable insights into the teaching and learning of history. These insights do not only deepen our theoretical understanding of how historical reasoning can be promoted, but also give teachers some practical guidelines for designing powerful tasks. We believe that an important task of the teacher is to create ample opportunities in the classroom for students to practice historical reasoning, in writing, in dialogue with other students, and in dialogue with the teacher. In all these three ways, the use or construction of visual or multimodal representations may sustain the reasoning process. For example, visual representations can be used to organise information form multiple documents in a writing task, in small group work, or as a point of reference in whole-class discussions. Clearly, teaching students to reason in history is a challenging job. It takes much time, is difficult to assess, and it requires good instruction materials and learning tasks. A lot of research can still be done is this area.

It should be clear that Dutch research on history education has ‘taken off’ and already resulted in interesting findings relevant for history teachers and teacher educators. In comparison with other countries, such as the UK and the USA, we have to make up for many years without any substantial research within the domain of history education. At this moment, the Dutch research covers a rich variety of relevant issues and research methods. The studies that are still in progress are promising and will certainly result in valuable contributions to our growing international body of knowledge about the learning and teaching of history.

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