Questioning the past: student questioning and historical reasoning
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1. INTRODUCTION

In general, asking questions is highly valued. In philosophy, literature, media and education 'good', 'critical', 'original' or 'thought-provoking' questions are highly esteemed. This chapter focuses on questions students ask in history education. We argue that the activity of question finding and asking is a meaningful learning activity. Furthermore, we think student questions can function as a facilitator of learning and teaching history. This chapter provides a theoretical introduction to three empirical studies reported in this dissertation. We discuss how the process and function of student questioning is conceptualized in (research) literature on history education and educational literature in other domains. We aim at giving a provisional definition of the ability to ask historical questions and providing a rationale for empirical research.

1.1 How is student questioning conceptualized in history learning?

In discussing history education, authors often refer to models of expert thinking in history. In regard to question asking, one may assume that expert questioning differs from questioning of novices. However, even in expert historical thinking the role of questioning in history seems to be a topic that is not widely discussed. Perhaps au-
thors on historical thinking see asking questions as a self-evident phenomenon, whereas asking a historical question does not always come naturally. Voss and Wiley (2006) state in their summary of characteristics of expertise in history: “…an aspect of the historian’s task that is virtually never studied (…) is the ability of the expert to be adroit in selecting and defining the issue to be studied. Problem-finding is the critical first step in problem-solving, and expert historians must have skill at posing interesting yet researchable questions” (p.573).

In the domain of history education, historical questioning has hardly been researched empirically. To guide our empirical research on historical questioning we discuss models that related the asking of historical questions to a wider range of historical thinking and reasoning activities. We also examine a few examples of empirical research that pay attention to historical questioning. Historical questioning is mostly conceptualized in the context of inquiry learning, teaching and learning with historical evidence (sources), working with textbooks and fostering historical argumentation and discussion. Most authors encourage the idea of student questioning in history. However, in teaching practice questions are mainly formulated by teachers and textbooks. Our aim is to define the competence of historical questioning by studying theoretical frameworks and empirical research that discuss historical questioning in various contexts. Below we discuss two frameworks on historical thinking and reasoning, some examples from research into historical reasoning, and empirical research into students asking historical questions.

1.1.1 Historical questioning in frameworks of historical thinking and reasoning

Schreiber et al. (2006) give historical questioning a prominent position in their model of competences in historical thinking. This model integrates (German) theory of history, history education and educational psychology in order to support empirical research that respects the domain-specific differences in learning and developing expertise. Schreiber et al. (2006) describe four core components of historical thinking: 1) competency in historical questioning, 2) competency in historical methods (reconstruction/deconstruction), 3) competency in historical orientation (historical consciousness, identity and practice) and 4) competency in historical content (concepts, structures). According to the authors, this model can be used to describe development in the competence of historical thinking (basic, intermediate and elaborate).

In characterizing the competence of historical questioning, Schreiber et al. (2006) argue that questions are a starting point of historical thinking and historical orientation (p.21-22). Questions about the past are formulated in the present triggered by uncertainty or interest and are grounded in a need to orientate. Interest or uncertainty can be triggered by experiences of change, the need to find a position, irritation about historical narratives or curiosity about historical developments. When asking a historical question one should consider the fundamental issue that knowledge of the past is fragmented; a future answer on the question asked is a reconstruction and some questions can never be (completely) answered. Furthermore, a historical question gives guidance to the information-gathering processes and historical heuristics that structure these processes. The competence of asking historical
questions consists of 1) being able to formulate questions out of interest/uncertainty grounded in a need to orientate, and 2) to develop questions while knowing the limitations of constructing historical knowledge. Thus historical questions should reflect an important aspect of historical thinking, which is the understanding of history as the answer to questions we ask. Interest about the ability to orientate oneself in time is a recent development in history education literature (Howson, 2009; Gautschi, 2009; Van Drie, Logtenberg, Van der Meijden & Van Riessen, 2009; Wilschut, Van Straaten & Van Riessen, 2004).

Van Drie and Van Boxtel (2008) regard the asking of questions as one of the components in their framework of historical reasoning, based on their own and international empirical research. Historical reasoning is defined as describing, comparing and/or explaining historical phenomena by asking historical questions, using sources, contextualization, argumentation, using substantive concepts, and using meta-concepts of history. In their view questioning should aim at historical understanding and reasoning. Questioning can be the start, a part or the result of reasoning historically.

Compared to the model of Schreiber et al. (2006), Van Drie & Van Boxtel (2008) do not describe development or progression in different aspects of historical thinking but present an analytical framework that describes historical reasoning as an activity. Asking a historical question is part of constructing or evaluating a historical reasoning; whereas when contextualizing, using or evaluating evidence, building a historical argumentation and applying substantial concepts and understanding of meta-concepts someone can ask descriptive (what/when/how), causal (why), comparative and evaluative questions about historical information. Interpreting a historical phenomenon implies a search for explanations (‘why did it happen?’), differences and communalities (‘what changed?’) and historical context (‘was it common in that time?’). Questions that reflect an understanding of meta-concepts are questions that deal with significance, indirect or direct causes or the trustworthiness of evidence. When constructing arguments students can ask questions like ‘Is there sufficient evidence for this claim?’ or ‘Are there any counter arguments?’

1.1.2 Empirical research on historical reasoning

Empirical research on historical reasoning and thinking sometimes illustrates the role of historical questioning without explicitly focusing on it. For example, Seixas (2006), among others authors, regards the use of sources as evidence as one of the benchmarks of historical thinking. With regard to questioning he states that “good questions are needed to turn a source into evidence” (p.5). This means that students, inquiring into the past, should first ask descriptive questions (e.g., ‘what is it?’) in order to contextualise historical sources. Asking questions plays an important role in evaluating historical evidence (sourcing), one of the central elements in inquiry.

The aim of conducting historical inquiry in the classroom is often to get students acquainted with historical ways of thinking and reasoning (heuristics). In this type of learning students learn to use historical thinking and build their own historical knowledge by analyzing sources, corroboration and contextualising (Wineburg, 1991; 1998). Wineburg (2001; 2007) showed that students do not ask the same ques-
tions as historians. In his study he describes experts in history who, as problem-finders, are used to (re)formulating questions. He describes the ‘specification of ignorance’ as one of the cognitive behaviours of historians who “explicitly acknowledged confusion, expressed puzzlement or wonder, asked questions, or specified gaps in knowledge” (p. 325). By specifying ignorance historians avoid judging the content of a source without taking the context of the source into account. Wineburg (2007) provides an interesting example of how the content of a source can trigger (critical) thinking that is not completely historical. Wineburg compared comments of novices and experts after reading a historical source. Participants read a newspaper article dated 1892, reporting President Harrison proclaiming a (national) Columbus holiday. Novices in history (e.g., students and primary school teachers) were mainly triggered by the historical Columbus concept and raised issues and questions about the fairness of honouring Columbus with a holiday. On the other hand, professional historians reading the same source regard the fact that this holiday was proclaimed in 1892 to be the most important historical issue at stake. By contextualizing the historical circumstances in 1892 historians realize that the historical meaning of Columbus is different than it was 500 years before. This example reveals that novices do not show the historical awareness that the interpretation of the historical event ‘Columbus discovers America’ can change over time. Giving students the opportunity to ask questions themselves can reveal this lack of awareness and help them resolve it. More often, questions are formulated by teachers and in learning assignments to support student thinking historically and to cultivate their handling of (evidence of) the past.

Several authors give examples of the type of questions students ask or are expected to ask. Examples are: “Is the source authentic, reliable and truthful? Is the documentation sufficient and pertinent? What is the evidence for a historical event? How certain, probable or plausible are the data?” (Quoted from Pontecorvo & Girardet, 1999, p. 368.) These questions support students with evaluating evidence. Other types of questions, such as exploratory and evaluative, can support historical argumentation. For example, Van Drie et al., (2006) found that the evaluative question ‘Were the changes in the behaviour of Dutch youths in the 1960s revolutionary?’ resulted in more historical reasoning in student essays than the explanatory question ‘How can the changes in the behaviour of Dutch youths in the 1960s be explained?’ (see also Van Drie & Van Boxtel, 2010).

Other studies into history learning implicitly pay attention to the questions used during inquiry activities. Questions formulated in tasks or by the teacher are generally questions that guide source evaluation and evaluating questions that foster (classroom) discussion. For example, Nokes, Dole and Hacker (2007) designed lessons to teach students historical heuristics (sourcing, corroboration and contextualization) in order to teach students to read historical sources critically. In the intervention students were instructed to read texts (traditional textbook or multiple conflicting documents). Two groups were guided by heuristic questions and the other group worked with content questions. Heuristic questions were questions like ‘which two documents would you rank as the most reliable/helpful in writing an essay?’. These questions were meant to reveal students’ use of heuristics while writing an essay evaluating the reliability of a pictorial source. The intervention in which content questions
were used asked students literal questions, inferential questions and opinion questions about the text(s). Both teaching methods (content and heuristic questioning) appeared to be effective. Students scored higher on a content and heuristic essay post-test (Nokes et al., 2007).

Monte-Sano (2008, 2011) focused her research on the instruction of history teachers in order to develop students’ historical reasoning and writing. She suggests (2011) that students need domain-specific support that goes beyond text comprehension in order to reason historically. In citing Collingwood (1943) she remarks that “historical reasoning begins with questioning records of the past” (p. 214). While reading historical evidence one should ask questions that support sourcing, contextualizing and corroboration in order to make meaning of the past. Students often do not read historical texts in this way (Wineburg, 1991). In an 11th grade history course a teacher trained students to read more carefully by instructing them to annotate (e.g., underlining text elements) as they read historical texts. In this way students learn to read carefully and ask questions while reading. This study focused on annotation and critical questioning texts in order to evaluate the authors’ opinions. Monte-Sano (2011) reports progress in historical thinking in student writing assignments.

A rare example of a practical textbook approach that encourages student questioning is presented by Smith (1990). This author presents a questioning approach helping students to 1) identify and clarify ‘problems’ in history, 2) efficiently and effectively ‘tackle’ sources, 3) make notes on historical information and 4) synthesize, arrange and organize information of these sources (Smith, 1990, p.6). In our own country, the Dutch history curriculum aims at developing students’ ability to formulate meaningful questions and hypotheses, and some history textbooks contain worksheets that explicitly practice this. Explicit instruction to question can foster learning in the domain of history. Teachers can support students by asking them questions that support critical reasoning in problem-based learning (see Saye & Brush, 2002).

To summarize, most authors use the perspective that when students are working with historical sources, their historical thinking needs to be cultivated, with expert reasoning as a guiding principle and example. This may explain why history teachers and textbooks often ask questions for students to answer. On the other hand, Barton and Levstik (2004) argue that students should be given the opportunity to formulate their own questions rather than working with questions formulated by teachers/historians. The Columbus example may show that learners in a domain may not ask the ‘right’ questions. However, taking student questions more seriously may perhaps support history teaching more than confronting students with questions that experts would ask. Student questioning may also prevent teachers disregarding the interest and difficulties students experience in their historical thinking and reasoning. Student questions might reflect naive or present-oriented thinking rather than historical thinking and reasoning about phenomena in the past. Student questioning can make student thinking more explicit, allowing teachers to help students transform their thinking and reasoning into historical thinking and reasoning.
1.1.3 Empirical research on historical questioning by students

To our knowledge, empirical research that investigates the characteristics of historical questioning by students is scarce. There has been some questioning research that uses history as a domain of study, but this research mainly focuses on questioning as a general learning strategy (see also next paragraph). One example is a study in questioning training in History by Ciardiello and Cicchelli (1994). They categorise questions as cognitive, convergent, divergent and evaluative questions. After training students in asking questions, Ciardiello and Cicchelli (1994) interviewed the students to determine the cognitive processes they showed when generating questions. They used general categories (Hunkins, 1977) to describe these processes (e.g., expressing affect, association, defends positions, etc.). Their research reflects the idea that questions can be regarded as a learning outcome and also argue for making students aware of the type of questions they ask. Neber (1999, 2008), who also studied student questioning in history in the context of text reading, defines learners’ questioning as ‘epistemic questioning’ that has two functions. Questions 1) help to define learner’s cognitive goals in order to generate knowledge and 2) help to guide the process of knowledge generation (metacognition). Neber (1999) performed a small scaled study into student questioning in a history classroom and compared the effects of training students to formulate knowledge-generating vs. process-controlling epistemic questions. Asking for knowledge (object characteristics of historical facts) triggered students to ask for contextualization of historical conditions and functions (e.g., ‘what made … possible?’ or ‘What was the function of …?’). Question stems and prompts for functions (process control) helped students formulating process-controlling questions that foster planning, monitoring and evaluation (e.g., I want to know …, important is). Neber (1999) found that of the students who were trained to formulate questions aimed at knowledge building, wrote better essays in the post-test than students who were trained in asking process oriented questions. This study suggested that training to ask questioning in history classrooms promotes learning in history. Neber and colleague also report on a study on cognitive and motivational aspects of questioning in chemistry in an inquiry context (Neber & Anton, 2008). Among other results, they found that training in questioning improves students skills in asking causal epistemic questions but no effects on students’ motivation in chemistry. However, it is still rather unclear how self-questioning as a learning strategy is influenced by domain-specific knowledge and reasoning. It could be possible that students ‘copy’ questions that are usually given to them by teachers and textbooks.

To conclude, historical questioning is given an important role in history learning, however often not explicitly (enough). Firstly, the ability to ask a historical question is conceptualized as an ability to engage in problem-finding in the context of historical inquiry. The contextualized questioning of historical sources and evidence is an important element of conducting historical inquiry. Secondly, besides inquiry, questioning is related to a wider area of historical thinking and reasoning. A historical question can be conceptualized as a question through which students try to understand the past and which can be a start, element or result of a historical reasoning. A historical question is grounded in interest, uncertainty and a need to orientate in his-
historical time. However, little is known empirically about student questioning in history. Research has been done in history classrooms and with reading history text, but it is often aimed at more general learning goals, such as text understanding or knowledge integration. While most authors on historical thinking stress the importance of a domain-specific perspective on learning, the domain-specific characteristics of questioning in history need more research. In order to design such research we briefly review the development of research in student questioning in other domains.

1.2 How has student questioning been conceptualized in educational literature over the last decades?

Student questioning has never lacked attention in educational studies. Many different conceptions and functions of student questioning have been discussed in general. How questions are conceptualized has been influenced by differences in perspectives on learning and differences between domains. In this paragraph we describe the development in research in questioning by discussing important review studies and theoretical frameworks on student questioning in education. In chronological order, we discuss review studies and publications on the process of student questioning.

1.2.1 Reviews on student questioning

Wong (1985) published the first significant review study that dealt with the effects of self-questioning on students’ processing of prose. Wong introduced three theoretical perspectives on student-questioning and their instructional implications. 1) Active processing theory assumes that self-questioning improves comprehension more than providing students with questions. Furthermore, a higher number of questions means more comprehension and higher-order questions are believed to cause deeper processing of the material. 2) The metacognitive perspective implies that students ask themselves questions in order to monitor their reading processes and 3) schema theory focuses on the role of prior knowledge and how self-questioning can play a role in activating this (lack of) prior knowledge. Although self-questioning seems to have positive effects on learning, Wong argued that there is a need for a better explanation of this effectiveness, especially in the context of the active processing theory. Self-questioning elicits different kinds of psychological processes, and how the seemingly simple activity of self-questioning can evolve over time is worth investigating. Thus, according to Wong, this question remains: what are the cognitive and motivational variables that contribute to the evolution of self-questioning strategies?

Rosenshine, Meister and Chapman (1996) continued this line of work by reviewing studies on questions generated by students during or after reading. This resulted in the conceptualization of questioning as a cognitive strategy with two goals: 1) questioning as a comprehension-fostering and active processing strategy and 2) as a comprehension-monitoring strategy. Rosenshine et al. (1996) evaluated the effects of teaching these strategies and identified different teaching methods. They analysed
the effects of different question prompts (e.g., signal words, question stems, types) and settings (e.g., grade level, length of training, type of instruction). Prompts are provided to support students with completing a task. Overall they found that teaching students to generate questions has positive effects on (reading) comprehension. With regard to the wide diversity of teaching practices, Rosenshine et al. (1996) argued that there is a gap between active processing theories and teaching practice. Many studies come up with their own instructional practices out of practical considerations. However, signal words, general question stems and the use of reading categories seem to be the most successful prompts in teaching students to generate questions. What these prompts have in common is that they are easy to use and are not too cognitively demanding.

Rosenshine et al. (1996) suggested that further research could focus on domain-specific characteristics of question generation and the use of prompts in content areas other than reading. According to them, it could be possible that question prompts limit cognitive processing in certain situations. In order to investigate this, one could compare the effects of providing students with prompts versus students questioning without prompts. Summarizing, Rosenshine et al. (1996) showed that student questioning as a cognitive strategy fosters reading comprehension and can be taught with many different instructional procedures. However, most of these findings are restricted to cognitive effects in the domain of reading. More research is needed into other questioning processes in other domains.

Recently, Chin and Osborne (2008) reviewed empirical studies done in the field of science learning and teaching. In their view students’ questions can support students in their learning process and also serve as a pedagogical tool for teachers. Students’ questions function as a motor of learning, they foster discussion, monitor understanding, and increase motivation and interest in a topic. For teachers, students’ questions can serve as diagnostic information, to evaluate the occurrence of higher-order thinking, stimulate problem-based learning and provoke critical reflection on classroom practice. Thus, giving students the opportunity to ask their own questions can make students more independent and motivated learners and, at the same time, provide teachers with information about students’ understanding. However, Chin and Osborne acknowledge findings that students do not often ask (spontaneous) questions in the classroom.

In discussing empirical research these authors arranged the different studies according to four important themes; type of students’ questions, effects of teaching questioning skills, questions in relation to other variables (levels, learning approach and instruction), and teachers’ perceptions of student questions. Compared to the reviews discussed above that have a mainly cognitive perspective on questioning, Chin and Osborne reported empirical studies that discuss the combination of affective and cognitive factors of questioning. For example, when discussing the quality of a question, it is not only the cognitive level that is important, but also the interest or genuine curiosity that make a question and learning task meaningful. Affect is also of importance in encouraging and triggering students to ask questions more often. However, Chin and Osborne conclude their review by suggesting further research into scaffolding and motivating students for and with questioning, contextual influences of questions and the role of questions in discussion.
1.2.2 Research on the process of questioning

Apart from the reviews on empirical research on student questioning, some researchers do not focus on the function and effects of student questioning, but take a micro perspective on questioning processes in order to understand the development and structure of questions formulated in different contexts.

In order to deepen the understanding of questioning, Dillon (1988, 1990) explored the process of student questioning in classroom practice. His work departs from the idea that questioning should not only be practised by teachers (as an exercise of power and control) but also by students. Questioning by students is seen as the starting point of effective education (Dillon, 1990, p. 9). Furthermore, Dillon is critical about the fact that in many classrooms, student questioning is scarce. Student questioning is appreciated, but in classroom practice teachers do not create an atmosphere in which student questioning flourishes. Moreover, Dillon states that students are discouraged from asking questions. In his view the process of questioning encourages learning.

Dillon (1988) provides a detailed description of the question-asking process. Asking a question is characterized by four moments; 1) a student experiences perplexity, 2) formulates a question 3) answers the question and 4) learns from the answer. The construct ‘perplexity’ was introduced by Dewey (1933). According to Dewey, perplexity is a state of mind that is the starting point of individual learning processes. It is the experience of a problem for which the solution seems to be out of reach. This also means that the depth of the problem experienced is individually different. Dillon describes the experience of perplexity: “an organismic experience, felt in the body as well in the mind, (...) one is experiencing a degree, minor or great, of doubt, wonderment, ignorance, bafflement, incomprehension, uncertainty, puzzlement – perplexity” (p. 18). Perplexity is caused by an observation that does not fit in “the complex of propositions describing our knowledge” (p.18). This disconnection may give rise to the second moment: asking a question. Not each experience of perplexity is followed by a question. While in an interrogative mood, questions are internally put into words. After this the question has to be uttered, which is generally the hardest move to make. The utterance of a question reveals and communicates the presumptions underlying a question (e.g., ignorance, perplexity, need, beliefs, etc.). The final moments, 3) answering and 4) learning, consist of searching for information that solves the question. This knowledge can offer new meaning, new observations are made or new experiences of perplexity arise.

Van der Meij (1994) focused on the first three stages of questioning and uses Dillon’s model (1988, 1990) for reviewing the literature on spontaneous student questioning. Van der Meij states that it is not the number of questions students ask that is interesting, but “the motivations for asking questions, the obstacles to formulating and expressing questions, the difference between internally and externally-triggered questioning, and the educational potential of not answering student questions” (p. 141). When a teacher decides not to answer a question the perplexity of the student is sustained, giving rise to possible other questions or further perplexity. The first stage, the onset of questions (perplexity) needs to be considered because of the different meanings questions can have. Presuppositions, implied by questions,
could be false, while the questioner presumes a presupposition is true. For example, asking: ‘Who was the leader of the Industrial Revolution?’ reveals the invalid presupposition that the Industrial Revolution was an event led by one person. Besides personal motives and beliefs, a combination of social, communicative and behavioural factors play an important role in the onset of questions.

Referring to Good, Slavings, Harel & Emerson (1987), Van der Meij stated that teachers should react positively to all student questions and avoid only high achievers developing questioning skills. Furthermore, the motivation to ask a question can have more than one function. Questions can serve a need for information but also a need for recognition, emotional support or attention. The onset of questioning in terms of perplexity can be a complex but also valuable source for teachers. It may be worthwhile to know how certain questions that students spontaneously ask originate and how to guide the process of formulating different types of perplexity into a question. Students may experience perplexity but not communicate this perplexity by asking a question.

The second stage of questioning is one of verbal and social ability (formulating and public expression). Students tend to have difficulty in formulating clear defined questions, and expressing a question could be blocked by contextual and personal factors. For example, a student could have different (strategic) motives for not asking a question or might not be used to expressing doubts in public. With regard to the formulation of questions, research should pay more attention to the purpose of questions. For example, one could divide questioning into understanding, acting or searching (Van der Meij, 1994, p. 148).

Van der Meij (1994) argued that students should be allowed more opportunities to ask their own questions, because perplexity is ‘intimately’ bound to the questioner. In other words, learning to ask your own information-seeking questions is much more meaningful for learning than imitating questions asked by the teacher or the textbook. The third stage, finding and formulating a question and having an idea of the (possibilities for an) answer to the question can facilitate important learning processes. Moreover, students may value and appreciate the asking of questions more if it is based on their own (positive) experiences. By studying the process of questioning one could study students’ development in questioning skills. Thus, educational research on questioning processes suggests focusing on the state of perplexity (even sustaining this experience), the production rules under which students ask questions and their idea of an answer.

In order to connect question asking and learning it is important to study the mechanisms of questioning. Otero and Graesser (2001) studied the conditions (production rules) under which students ask questions. Discrepancies in expository texts could cause a knowledge clash or a knowledge deficit, which are the basis of question asking. The knowledge clash hypothesis assumes that the more world knowledge a student has, the more questions are asked when confronted with information that is contradictory (Miyake & Norman, 1979). On the other hand, the knowledge deficit hypothesis predicts that the more world knowledge a student has, the fewer questions are asked because the questioner has fewer doubts about the information.
Otero and Graesser (2001) discuss mechanisms that may produce discrepancies or conflicts. In their (PREG) model of question asking Otero and Graesser present three components that describe different discrepancies that can occur between readers’ knowledge and text representations. Questions can be triggered by text representations such as words, statements and links, and can have a surface, text-based or situation-model level. At a surface level, questions use the same wording as the text (e.g., ‘What does X mean?’). Questions at a text-based level try to understand the meaning of the text in terms of structured propositions (e.g., ‘Why is Y stated in the text?’), while questions asked at the situation-model level are questions about the referential content of the text (e.g., ‘I know X, but here it says Y, why?’) (Otero & Graesser, 2001). Word-based questions involve unknown words in the text; statement questions are asked when a reader has difficulty understanding a statement and constructing a meaning. This difficulty can be caused by difficulties with the situation model or discrepancies between the situation model in the text and prior knowledge. Finally, link questions are questions asked when a reader experiences a disparity between text links and their own background knowledge. (Otero & Graesser, 2011, p.152-153.) Questions at the situation-model and link levels appear to be more higher-order questions than questions at the text-based and word levels. Asking situation-level questions suggests the active use of the readers’ prior/background knowledge. Experiencing a conflict or discrepancy in the situation model can only take place if the reader has sufficient knowledge about the topic.

Summarizing, research into processes of questioning by Dillon, Van der Meij, and Otero and Graesser reveals that in order to evaluate the quality of questions students ask we need to investigate underlying processes of triggering and formulating questions. However, this field of research mainly focused on the cognitive aspects of questioning. It is known that prior knowledge is an essential element that explains the process of questioning. The experience of a knowledge deficit or conflict is an important condition. In this study we are also interested in how domain-specific and affective aspects characterize and facilitate questioning processes. In the following paragraph we explain how domain-specific reasoning and affect (emotion, interest) could be valuable elements in studying questioning processes.

1.3 The role of affect and domain-specific reasoning in student questioning.

Theoretical ideas about the underlying processes of questions discussed above are useful for defining the ability of students asking historical questions. Knowledge about how and by what a question is triggered provides information about the quality of the question asked. However, many studies focused on the cognitive aspects of questioning in a context of other learning activities, such as reading, inquiring and argumentation. In research on student questioning, relatively little attention is paid to affective and domain-specific aspects of questioning and the underlying processes.

Within a domain, questioning can be related to expertise development. Like some perspectives discussed above, Alexander (2003) regards the asking of questions as being able to find problems and ask questions that contribute to knowledge building in a domain. In this view, questioning is a higher-order strategy that is con-
nected to the highest level of expertise in the model of domain learning (MDL) (Alexander, Jetton & Kulikowich, 1995). This model connects cognitive and affective factors in developing expertise in a domain (from acclimation, competent to expertise), such as knowledge, interest and motivation, expertise and strategic processing. Connected to the MDL is the four-stage model of interest development (Hidi & Renninger, 2006). According to Hidi and Renninger (2006), interest develops from a triggered situational interest to a well-developed interest. Situational interest is the type of interest that is externally triggered by different contexts, such as vivid texts or engaging tasks (Schraw & Lehman, 2001), while a well-developed interest in certain topics or domain is called individual interest. According to Hidi and Renninger (2006), the asking of ‘curiosity’ questions is connected to the third stadium of emerging individual interest in which learning is more self-generated. This is dependent upon the opportunities students are allowed to follow their own interest and instruction. Prior to this stage of self-questioning students should be provided with questions that are important in the domain (p. 122). This model also suggests that levels of interest can differ in classrooms and that it may be useful to trigger interest to support student self-questioning. However, it still remains unclear whether students ask more or different types of questions when they are interested. It also remains unclear how student questioning is influenced by triggering situational interest.

Affective factors such as interest, curiosity and emotions can play an important role in student questioning and learning in history (see Berry, Schmied & Schrock, 2007). For example, many controversial topics in history education (slavery, conflicts) trigger emotion and affect that can engage students with learning history (Barton & McCully, 2007; Goldberg, Schwartz & Porat, 2011). Barton and McCully (2007) promote the idea that history teachers should deal with student emotions and empathy by offering a rationalized version of the past, instead of neglecting them. However, Husbands and Pendry (2000) describe how affective issues are complicated for students in two ways as they experience a historical distance (between feelings and thoughts of historical and present actors) and a distance between adults’ mindsets and the emotional development of children. These issues influence history learning while reading historical text and accounts. Students tend to use their (present-day) understanding of emotional relationships in order to understand the past. Wertsch (2002) also acknowledges an emotional dimension while reading historical texts, apart from a cognitive dimension (mastering the text). In his view a historical text can ‘be made one’s own’ (appropriation) or someone can ‘distance oneself from a text’ (resistance). Interest in or an emotional connection to the topic a text is dealing with can trigger appropriation but does not necessarily mean that the content is mastered by students. For example, a student can have positive feelings of pride based on nationalistic motives but does not know much about the historical facts in the history of his or her country (Wertsch & Polman, 2001).

Although most authors in history education acknowledge this emotional, subjective dealing with historical topics, most of them see it as problematic as it hinders genuine historical understanding with anachronisms and present-day perspectives (e.g., Lee & Ashby, 2001). Authors on historical empathy tend to value the cognitive processes that underlie historical perspective-taking and empathy (e.g., Hartman &
Hasselhorn, 2009). However, affective processes may be powerful triggers to engage students in history learning and, for this reason, cannot be neglected. Affects such as interest, curiosity and emotions can facilitate cognitive processing (e.g., Demetriou & Wilson, 2009). In the case of history learning, teachers can let students project their feelings and thoughts to historical situations or let them focus on puzzling situations that trigger curiosity before allowing them the opportunity to ask questions (Yilmaz, 2007; Ciardiello, 2007) and before engaging them in historical reasoning.

Summarizing, student questioning could be connected to the development of interest in the domain and domain-specific features that could trigger affect (that may give rise to questions). Domain-specific knowledge about underlying affective processes in questioning can be important to support teaching and learning to ask meaningful questions. Besides the cognitive aspects of questioning, attention to affective factors, such as interest and emotions, can help trigger students to ask questions and provides a domain-specific point of view on the questions students ask.

Training students to use certain question stems can be a useful strategy that improves student questioning. However, often these strategies mainly focus on the cognitive aspects, and working with question stems might ‘disturb’ the genuine questioning process and cause ‘mechanical’ learning without attention being given to interest or other question-asking motives. A student could ask the higher-order historical question ‘Why did World War I start?’ while already having a superficial idea of the answer such a question demands; for example, reproducing a limited list of two or three causes, or the idea that only one cause is the right answer. On the other hand, this question could be triggered by a cognitive conflict embedded in historical reasoning or genuine interest. This example shows that it is difficult to evaluate a question only on the basis of the formulation (e.g., Yang, 2006).

1.4 Conclusion

In this chapter we discussed how the process and function of student questioning is conceptualized in (research) literature on history education and in educational literature in other domains. In this concluding paragraph we provide a provisional definition of the ability to ask historical questions that guides our empirical research.

From the previous paragraphs we conclude that historical questioning is considered an important element in historical reasoning by several authors in the domain. Research on student questioning in other domains has mainly focused on the cognitive aspects of questioning.

Furthermore, we discussed theoretical reflections on questioning processes that revealed a further need for knowledge about domain-specific and affective processes that may underlie the triggering and asking of questions. Based on our literature review, we assume that historical reasoning, prior knowledge and affect (interest/emotions) play an important role in asking historical questions.

Our provisional definition of the ability of asking historical questions is: being able to ask questions that are embedded in historical reasoning. A historical question is a product or an initiator of historical reasoning (contextualization, causal or comparative reasoning or argumentation) while trying to put into words a conflict or
deficit in prior knowledge about historical constructs, phenomena or developments. Finally, a historical question can be embedded in affective processes such as interest or emotions that may drive further engagement in historical reasoning.

Our literature review also reveals positive effects of self-questioning on learning, mainly in the domain of reading, higher education and science learning. Research also suggests that deeper, more fundamental questions are triggered internally compared to prompted questions by textbooks or teachers (e.g., Scardamalia & Bereiter, 1992; King, 1992). However, because of the many different contexts in which these studies are carried out, the underlying conceptualisations of questioning could be important. We assume that student questioning can contribute to educational practice in a positive way if practitioners (e.g., teachers and students) get more explicit guidance in questioning processes, as well more awareness of the different functionalities of questions. Creating a stimulating learning environment that triggers and values student questioning seems to be one of the challenges for teachers (e.g., Dillon, 1990, Chin & Osborne, 2010).

In the following chapters we will discuss the meaning of student questioning in learning and teaching of history. We investigated how student questions in history are triggered with a historical introductory text(s), the underlying cognitive and affective processes that precede the asking of questions, and to what extent student questions are embedded in historical reasoning.