

# Differentiated Instruction in History Education – A Subject-specific Analysis of Why and How

## Instrucción diferenciada en la enseñanza de la Historia. Un análisis específico del porqué y el cómo

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### Resumen

La instrucción diferenciada es un enfoque de la enseñanza en el que los maestros responden de manera proactiva a las necesidades y preferencias de los estudiantes en su aula. Este estudio busca aumentar la comprensión que tienen los profesores de historia en formación de la programación educativa para atender la heterogeneidad en el aula. Se basa en los planes de estudio de los profesores de historia en formación. Se recopiló información sobre la implementación real de prácticas de enseñanza diferenciadas por parte de los docentes en formación sobre la base de planes de clase diseñados con ese propósito. Los tres tipos de heterogeneidad, descritos por Tomlinson, se concretaron aún más para el dominio de la enseñanza de la historia. Se encontraron tres tipos de estrategias educativas para atender la heterogeneidad en la enseñanza de la historia: el aprendizaje colaborativo, los enfoques escalonados, la orientación y el andamiaje. Se concluye que los profesores de prehistoria logran diseñar lecciones de historia en las que se realizan adaptaciones educativas para atender a la heterogeneidad, pero que a menudo no se puede encontrar un vínculo sistemático entre la evaluación de la heterogeneidad y la programación educativa.

### Palabras clave

Enseñanza de la historia, métodos de enseñanza, análisis cualitativo, formación del profesorado.

### Abstract

Differentiated instruction is an approach to teaching in which teachers respond proactively to the needs and preferences of students in their classroom. This study seeks to increase insight in which instructional design pre-service history teachers use to cater for heterogeneity in the classroom. It draws on pre-service history teachers' lesson plans. Data regarding pre-service teachers' actual implementation of differentiated teaching practices were collected based on natural and purposeful designed lesson plans. Three types of heterogeneity as described by Tomlinson were further refined for the domain of history education. Three types of instructional strategies to cater for heterogeneity in history education were found: collaborative learning, tiered approaches, guiding and scaffolding. It is concluded that pre-history teachers manage to design history lessons in which instructional adaptations are made to cater for heterogeneity, but that often no systematic link could be found between assessment of heterogeneity and instructional design.

### Keywords

History education, teaching methods, qualitative analysis, teacher education.

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## 1. Introduction

Awareness of student heterogeneity is increasing in the past decades, also in history education. It cannot be assumed that students that are grouped into one class all share the same educational needs. There exists a plethora of differences between students that can affect the learning process. Differences in prior knowledge (Shapiro, 1999), cultural (Wallerstedt & Pramling, 2016) or linguistic background (Banks, 2016), are all aspects of heterogeneity that can be relevant to teaching history. However, there is relatively limited research on the role and relevance of student heterogeneity in history education.

Progression models in history education have repeatedly tried to define what readiness in history education would be. Until now no consensus has been found. Lee and Ahby (2000) for instance stated that students progress following six stages of historical thinking, such as 'the past as given' or 'the past as constructed'. Seixas described six benchmarks of historical thinking, such as taking historical perspectives and using primary sources. Readiness in history seems to be highly context and content dependent. It has been found that students' reading skills and historical content knowledge affect their performance of historical reasoning (Huijgen et al., 2017). Hyry-Beihammer & Hascher (2015) documented Austrian and Finnish primary school teaching practices, they were teaching history, among other topics, in multigrade classrooms. This study noted that teachers were bound to acknowledge the readiness differences among their students, and found two main strategies used by these teachers, namely, to reduce or capitalize on students' heterogeneity. If linguistic or conceptual background knowledge affect learning, then history teachers should tailor instructional design to these differences among their students. It may likewise be argued that also other types of differences in prior knowledge such as procedural knowledge (Britt & Aglinskas, 2002; van der Eem et al., 2022) or differences in epistemic beliefs (Nitsche et al., 2022) could strongly influence learning in a history classroom, and therefore be catered for by history educators. Hence, it is a complex challenge for history teachers to address their students at an appropriate level of readiness.

The focus in the field of using heterogeneity in history education has been also on fostering multiperspectivity. Scholars have advocated that dialogue between students with diverse perspectives fosters the purposes of history education (van Boxtel and van Drie, 2017). An increasing body of research exists regarding how to use students' multiple perspectives in history education (Huijgen et al., 2017; Wansink et al., 2018). Lozano Parra argued that different or even conflicting perspectives of students uphold an important educational resource for social sciences teachers (2022). Kawamura (2023) recently argued that diverse linguistic settings and the heterogeneous cultural backgrounds of students are a challenge that requires adaptations in history teachers' instructional design. It has also been argued that history education should be an inclusive practice. Barsch (2020) summarized arguments for the inclusion of students with learning difficulties or with disabilities in history education.

All of these arguments have in common that heterogeneity of the student population is a key element of instructional design in the history classroom. However, it is not always clear how the use of heterogeneity as a source of instructional design should materialize in the classroom. Instructional strategies are always to a certain extent generic, but they are also subject-specific (Shanahan & Shanahan, 2008). An assumption of this study is that responding to heterogeneity is subject-specific, at least to a certain extent. More insight is

needed in how to address all these types of differences in history education classrooms. Smets et al. (2020) found that history teachers struggle to assess their students' prior knowledge, and to connect instructional design with student assessment. It was also found that pre-service history teachers find it difficult to flexibly manage the goals in their instructional design, and hence to differentiate learning targets among students (Smets et al., 2021). More research is needed to elucidate how history teachers use student heterogeneity as a basis for instructional design.

## 2. Theoretical framework and aim of the study

### 2.1. Theoretical framework

Dick and Carey (1996) developed a widely used model of instructional design. The comprehensive model implies an ongoing cycle of design and redesign of lessons. Key elements in the model are the following: [1] to design instruction one must identify the instructional goals, hence the skills, knowledge, and eventually attitudes to be acquired. Then, [2] teachers must conduct an instructional analysis; they must identify what prior knowledge is needed to perform a particular task and identify and analyze the context elements at the learners' level that will influence learning. Learner characteristics at individual and group level are considered relevant contextual elements. [3] Based on these analyses concrete performance objectives are set, and lesson design is drawn. Dick and Carey see instructional design as a cyclical process in which objectives determine assessment instruments, instructional strategies, and instructional materials. Key elements of this model are used in this study to analyze pre-service history teachers' instructional design, and to elucidate how they accommodate for heterogeneity.

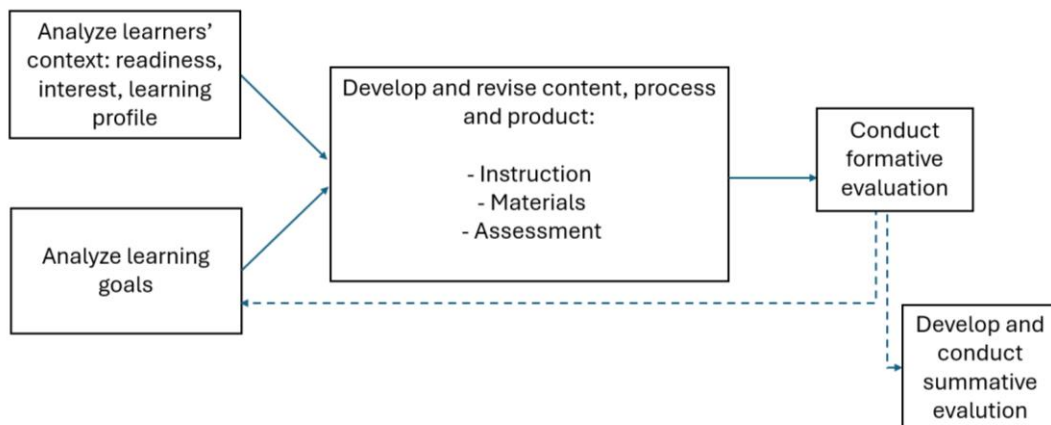


Figure 1. Systematic design of instruction to respond to student heterogeneity. Source: own elaboration.

Differentiated instruction (DI) is a generic framework developed by Tomlinson about responsiveness for student heterogeneity (Tomlinson et al., 2003). It allows to get insight in which elements of heterogeneity might affect learning. In lack of a comprehensive subject-specific model of instructional design that adequately considers the role of student heterogeneity, this study seeks to apply the concept of DI to history education. Figure 1

synthetizes Dick and Carey's elements of systematic design of instruction with Tomlinson's concept of differentiated instruction, as used in this study. Essential to Tomlinson's model is that differentiation it is not merely a matter of choosing an instructional approach. DI is a type of instructional design that requires teachers to align learning goals, students' heterogeneity, and instructional approach. In doing so, Tomlinson's model is a type of systematic design of instruction, as proposed by Dick and Carey. Tomlinson discerns three types of heterogeneity among students to which teachers may respond. Readiness is defined as "a students' current proximity to specified knowledge, understanding and skills" (Tomlinson & Imbeau, 2023, p. 17). This avoids describing ability as a generic category, rather achievement is related to specific upcoming learning goals. In history education readiness can be interpreted as mastery of diverse generic aspects of historical thinking (Van Boxtel & van Drie, 2018; Levesque & Clarke, 2018), such as critical sourcing or argumentation skills. The context-specific mastery of substantive historical knowledge on which a teacher intends to draw on a particular moment (Chapman, 2021) is another aspect of students' readiness. Cuenca (2020) argued that history educators in urban settings should acknowledge their students' experiences and funds of civic knowledge. Drawing on Feretti et al. (2005) it can also be argued that students' eventual misconceptions should be seen as a relevant aspect of readiness in history education.

DI refrains from reducing heterogeneity to ability differences, two additional categories of heterogeneity are informing instructional design: student interest and learning profile. Student interest is about "that which engages the attention, curiosity and involvement of the student" (p. 17). Van Straaten, Wilschut and Oostdam (2018) explored pedagogical approaches in history education with the potential to engage students. They argue that content selection in history education should be aligned with topics of students' interest. Van Boxtel, C. and van Drie, J. (2017) argue that it is important for history educators to connect content with students by integrating multiple perspectives into lesson planning. Likewise, Santiago & Dozono (2022) argue for a critical understanding of history education in which teachers integrate students' social or cultural perspectives to engage them with the purposes of the subject. In a heterogeneous classroom, in which students have diverse areas of interest, history teachers face the challenge of adequately responding to the interest of their students.

Students' learning profile is about an inclination to take in, explore, and express content at a given time and in a given context" (p. 17). Scholarly work in this domain of history education is not well developed, hence it is not exactly clear what a learning profile in history education would be. There have been however studies that indicate that gender differences are relevant to consider (Fournier & Wineburg, 1997). De La Paz & MacArthur (2003) explored the field of responding to learning difficulties, they argued that domain-specific instruction is needed for instance for reading or writing disabilities.

As heterogeneity informs instructional design, assessment for learning (Black & William, 2009) is a key element to the theory and practice of DI. Tomlinson and Imbeau define it as "a data-gathering and analysis process that determines the degree to which students have achieved essential outcomes and informs decisions about and planning for instruction" (Tomlinson & Imbeau, 2023, p. 21). Tomlinson initially discerned three types of accommodations that teachers use to respond to heterogeneity: adaptations of content, process and product (2001). Content adaptations imply that information and ideas that students grapple with are adapted in order to reach the learning goals. Content adaptations in history education might for instance imply that strategies such as enrichment

[adding additional content for a particular group of students] or compacting [skipping redundant content] are used to tailor content to students' needs (Surya & Nurdin, 2021). Also, the process can be adapted, which means that adaptations are made in the way students deal with and make sense of the content. Accommodating product means that differences are used in "how students show what they know, understand or can do" (Tomlinson & Imbeau, 2023, p. 15). More recently, a fourth type of accommodations was added to the model, namely affect and environment. These are accommodations that teachers use to adapt the climate or tone in a classroom (Tomlinson & Imbeau, 2023).

Interestingly, the instructional strategies that are used to accommodate for all these differences have received relatively little attention in research literature. In Tomlinson's work a broad range of strategies are proposed. Some of these are well documented in research literature: for instance tiered assignments (Albrecht et al., 2015; Ehren & Nelson, 2005; Noda & Tanaka-Matsumi, 2014) or small group instruction (Cuban, 2012; Noltemeyer et al., 2013) are established instructional strategies. Empirical research that studies these strategies in history education is scarce. Poitras and Lajoie (2014) proposed a scaffolded approach to inquiry learning. In this approach scaffolding of students inquiry in which content and mentoring were based on monitoring of students. Graves and Avery (1997) advocated the role of scaffolding students' reading history. In a differentiated approach this would imply that students with different reading abilities would be differently scaffolded in a reading assignment. Content or process adaptations in history education might be catered for by using cooperative learning strategies (Haenen & Tuithof, 2008). They are a diverse set of instructional strategies in which students learn with and from each other by working collaboratively on assignments (Slavin, 1989). There exists also a series of strategies that remains out of sight in research literature. Virtually no peer reviewed literature exists for instance on some of the strategies that Tomlinson describes like interest centers, learning contracts or expression options.

It has been noted that neither the types of heterogeneity, nor the types and examples of accommodations are entirely precise (Smets & Struyven, 2018). The internal validity of Tomlinson's model of DI is somehow problematic because a certain overlap between the categories of heterogeneity exists. Yet the advantage of the DI model is that it acknowledges a broad set of differences between learners. Both for types of heterogeneity and for types of instructional adaptations it provides a comprehensive model of teachers' options to align heterogeneity and instructional design. Drawing on the diverse aspects of catering for diversity in history education it might be even more important than in other subject topics to use Tomlinson's broad conceptualizations on accommodating diversity.

## 2.2. Aim of the study

The aim of this study is to increase insight in which instructional design can be used to cater for heterogeneity in history education. Therefore, it is described how differentiated instruction is operationalized in history classrooms. Lesson plans that were generated in a history teacher education institute were used. The following research question will be used to guide this study: which instructional designs are used by pre-service teachers to cater for heterogeneity in their classrooms. Two sub-questions will further structure this study. [1] For which types of student heterogeneity do pre-service history teachers accommodate? [2] Which instructional strategies do pre-service history teachers use to cater for heterogeneity?

### 3. Method

This study draws on pre-service history teachers' lesson plans to understand how general theory on DI is operationalized in history lessons. The following procedures were used to study instructional design that accommodates for heterogeneity in history education.

#### 3.1. Data collection

A qualitative study design was chosen to collect data regarding pre-service teachers' operationalization of differentiated teaching practices in history education. Data were collected from the institutional archive of a teacher education institute in Flanders (Belgium). The institute is situated in a superdiverse urban setting: hence the urgency to acknowledge diversity is high. Tomlinson's model on DI is used for learning novice teacher to accommodate pupils' heterogeneity at this institutes curriculum. Documents collected were generated by pre-service history teachers in the second year of their undergraduate education, they are entirely based on naturally collected documents that are part of the institute's curriculum. Teacher training at the institute is aligned with the Belgian [Flemish] national history curriculum that primarily aims to target historical thinking. Ethical procedures of the institute were followed.

Two data sources were drawn upon. [1] In a first dataset results of an assignment were used. After following two lessons on instructional design of history lesson in heterogeneous settings, pre-service history teachers were asked to select one lesson in which they applied the principles of DI. Tomlinson's framework for DI was used to structure these lessons. Each teacher was assigned to hand in a self-designed lesson plan, and to reflect on how the principles of DI, as defined by Tomlinson, are implemented in this lesson. Documents of 24 teachers were found, two were excluded because of insufficient detailed descriptions. Since these documents were purposefully designed, they give an insight in the diverse practices into which DI in history education may result. [2] In a second dataset lesson plans of pre-service history teachers (n=15) were analyzed. These are documents designed by pre-service students during an internship in lower secondary education, hence no specific prompts regarding catering for heterogeneity were given. Hence, this second type of documents represents a more natural selection of data that gives insight in the instructional design that is used by these teachers regarding DI. Five lesson plans per teacher (n=75, in total) were randomly selected out of a larger database. Lesson plans were designed for pupils of 12 to 16 years old. Aligned with the curriculum in Flanders, lesson topics mainly consist of prehistory and ancient history and learning goals target diverse aspects of historical thinking and reasoning.

#### 3.2. Data analysis and synthesis

A template for lesson planning was used in both datasets. The template exists of a standardized format to describe content and instructional design of a history lesson that is based on Dick and Carey's model of systematic instructional design (1996). Generally, a lesson plan exists of around 50 minutes of teaching time. Curricular learning goals and lesson objectives, context analyses, used documents and sources, and timing and management of planned instruction or students' activities are described in these documents. In the first dataset, the purportedly designed lesson plans, an extra reflection question was added to explain how the teachers had implemented DI.



A qualitative content analysis was performed on the selected documents using the principles of within-and cross-case analysis (Miles & Huberman, 1994). Initially, the first dataset was analyzed using descriptive codes: a within-case analysis was made per document to categorize the existing practices. Tomlinson's categories of heterogeneity were used for coding data (readiness, interest, learning profile). Tomlinson's examples of instructional strategies were initially used as sensitizing concepts, however they were extended, refined and reclustered data-driven. Also, categories of assessment were selected data-driven. This resulted in a table that summarizes key elements of instructional design per lesson plan. The next step in the analysis focused on the second dataset (75 selected lesson plans). The emerging coding structure was used to analyze these documents. Where needed initial codes were further added and refined. A list of codes that were used is added in annex 1. Finally, a cross-case analysis was made to answer the research questions. Cross-case patterns of similarities and differences are summarized in the findings' section of this study.

### 3.3. Trustworthiness and reflectivity

Data collection, analysis and synthesis were effectuated by the author. Being a senior history teacher and teacher educator, and as a university researcher with focus on student heterogeneity, he is considered qualified to conduct data analysis in this field. A checklist for researchers to improve trustworthiness of qualitative content analysis was followed throughout the process (Elo et al., 2014). However, qualitative research studies in the hands of one single researcher are always vulnerable. To further increase consistency and transparency, a qualitative research audit trail was initiated (Akkerman et al., 2008). A senior researcher and history teacher educator at another university was engaged as an external auditor. She was considered capable and also sufficiently distant to perform an audit (de Kleijn & Van Leeuwen, 2018). A report was drawn to detail choices in the theoretical framework, data analysis, description of the findings and discussion. This report was analyzed together with elements of the dataset that were randomly selected by the auditor, and the current article. Subsequently, auditor and author discussed remaining doubts or conflicts of interpretation, and necessary refinements to the study were implemented.

## 4. Findings

### 4.1. For which types of student heterogeneity do pre-service history teachers accommodate?

Pre-service history teachers use categories of heterogeneity that are aligned with the categories that are commonly described in literature on differentiated instruction: readiness, interest and learning profile. These categories are further specified for history teaching into subtypes in table 1. Table 2 identifies the topic and learning goals of 22 purposeful designed history lessons and relates it to the context analysis that pre-service history teachers made.

**Table 1**  
*Types of heterogeneity in history classrooms*

Category	Types of heterogeneity
Readiness	Conceptual Knowledge (RCK), Procedural Knowledge (RPK), Language Readiness (RL), Pace (Pa), Readiness Diverse (RD), Unspecified (RU)
Interest	Content (IC)
Learning profile	Individual educational needs (LI), Personal learning preferences (LP), Learners' behavior (LB)

Source: own elaboration.

Pre-service history teachers are relatively detailed in the description of the readiness of their students. They refer to differences in pupils' conceptual historical background knowledge (RCK), and differences related to the application of diverse procedures of doing history such as interpreting sources or reading historical maps (RPK). Also, several pre-service history teachers refer to different language mastery levels (RL). These differences are observed both in regular and in multicultural teaching settings. The divergent pace at which their pupils work while doing independent or group work (RPa) is another subtype of readiness. In some cases, readiness remains unspecified (RU) in general terms such as 'strong students' or 'weak learner'. Only one subtype of interest-related heterogeneity is found, namely related to content (IC). These differences are not described in more detail. No references are made to interest related to pupils personal or cultural backgrounds, neither to other sources of multiperspectivity. Individual educational needs (LI), such as dyslexia, autism spectrum disorder or dyspraxia are an important subtype of learning profile that is used regularly in both datasets. However, in several cases it remains unclear how these needs could refer to the learning of history. Personal learning preferences (LP) are another subtype of heterogeneity found, examples are the desire to work collaboratively or independently, to read or watch a video, or the choice to make digital or paper notes. Finally pre-service history teachers regularly refer in the context analysis that informs their instructional design to differences in pupils behavior in the classroom (LB). References are made for instance to students' ability to focus during individual work or to students' habit to chat during collaborative tasks.

**Table 2**  
*Pre-service history teachers differentiated instructional design [dataset 1]*

#	Topic	Learning goal	Assessment instruments	Context analysis	
1	End of Roman Empire	Chronological awareness [change], using historical sources to substantiate evidence	AU	RD	Divergent needs in reading of historical sources
2	Human subsistence during	Chronologic awareness and interpreting historical maps	ET	RD	Divergences in mastery of reading and understanding historical maps



	the ice age				
3	Origins of Mesopotamian and Egyptian cultures	Understanding and using historical concepts	KQ	RL	Divergent language mastery levels [non-native language speakers]
4	Homo sapiens and Neanderthal	Chronologic awareness and conceptual knowledge	ET	RL	Divergent language mastery [video in English for non-native English speakers]
5	human species	Describing human evolution	EX	RC K	Differences in prior conceptual knowledge
6	Julius Caesar and the war in Gallia	Using historical sources and critical sourcing	EX	RP K	Differences in procedural knowledge to assess the trustworthiness or sources
7	Characteristics of Etruscan culture	Different targets [chronology, concepts, sources]	ET	RC K- RL	Differences in prior knowledge of related historical concepts, and other language
8	Human subsistence during the ice age	Using historical sources	SA	RP K	Different mastery of procedural guidelines to analyze sources
9	Trade in the roman empire	Conceptual knowledge and causal relations	SA/Ex	RU	Divergent prior knowledge [not specified], individual instructional needs
10	Minoan culture and economy	Different targets [maps, concepts, sources]	Ex	LP	Diverse individual learning needs, profile: want to work alone or in pair

y

11	Education in roman society	Critical sourcing	AU	RU	not specified
12	Egyptian religion	Conceptual knowledge	KQ/Ex	IC	not specified
13	Punic wars	Diverse targets [chronological awareness, causality, positionality]	SA/ET	RP K	Differences in use of procedural guidelines to analyze sources
14	Early development of writing	Conceptual knowledge	SA	RC K	Different prior content knowledge regarding politics and art in Mesopotamia
15	Hellenistic art	Substantiating evidence from sources, causal relations	Ob/SA	RC K	Different prior knowledge about the implications of Alexander the Great's wars
16	The origins of agriculture	Critical sourcing	SA	RP K	Differences in ability to abduct information from a graph, interpretation of context
17	City states	Conceptual knowledge	ET	RC K	Differences in use of terminology regarding sedentarisation
18	Governance in the polis Athens	Conceptual knowledge	KQ	RC K	Differences in prior conceptual knowledge [voriges]
19	Determining the trustworthiness of	Critical sourcing	AU	RP K	Divergent procedural knowledge of critical sourcing

	sources				
20	interaction between Roman and Germanic societies	Conceptual knowledge and critical sourcing	AU	RP	Differences in working pace
21	evolution of mankind	Conceptual knowledge	KQ/Ex	RP K	Divergent mastery of reading and understanding of historical maps
22	using historical sources	Substantiating with evidence from historical sources, assessing trustworthiness of sources	Ex	RP K	Differences in procedural knowledge of critical sourcing

Source: own elaboration.

#### 4.2. Which instructional strategies do pre-service history teachers use to cater for heterogeneity?

Three main categories of instructional adaptations are found: collaborative learning structures, guidance and scaffolding practices and tiered assignments. Table 3 elaborates these categories into different subtypes. Different techniques for collaborative learning (CL) are found. Cooperative learning structures (CL-Ss) are diverse types of structures that are used to allow students to interact and learn with and from each other. These structures imply that students collaboratively discuss and exchange information following a planned structure of collaboration. This allows students to work at complex assignments which include critical sourcing or documenting causal relations between events. Students' educational needs or preferences are the basis on which collaborative groups are composed, hence in most cases group composition is based on students' self-assessment. The simplest option is by allowing to work in pairs if an exercise is considered too difficult to do individually for a number of students. Alternatively, students who prefer to work individually, may be allowed to do so. Another common example is the *think-pair-share* structure. A particular type of these structures is the CLIM-method [Cooperative Learning In Multicultural groups] which allows students to take different roles during collaborative work, such as a chair, a notetaker and a timekeeper. In several cases collaborative learning specifically targeted readiness convergence between students by composing intentional heterogeneous groups of pupils (CL-h). They were asked to work collaboratively on a task without further structuring instruction, but the composition was such that students with more and less readiness were combined into the heterogeneous groups. The technique of station teaching (CL-St) implies that pupils are working collaboratively, while content or process can be adapted to the students' needs. Station teaching does not necessarily imply intentional heterogeneity within groups.

Table 3

*Three categories of instructional strategies to cater for heterogeneity in history education*

Category	Types
CL Collaborative learning	Cooperative learning structures (CL-Ss), Intentional Heterogeneous grouping (CL-h); Station teaching (CL-St)
GS Guidance and scaffolding	Small group instruction (GS-sg); Questions (GS-q); Procedure (GS-p); Additional sources or information (GS-so)
TA Tiered assignments	Additional exercises or assignments (TA-a); Difficulty or content sources (TA-s); Adapted exercises or worksheets (TA-e); Preteaching – homework (TA-p); Inclusive adaptations (TA-l).

Source: own elaboration.

Diverse types of differentiated guidance and scaffolding were found. This implies that a teacher differentiates the guidance or scaffolding that is provided. Small group instruction (GS-sg) is provided to allow additional instruction if a group of students needs additional teacher-guidance or help whereas peers are working independently. It is also used if a group of students wants more complex instruction than their peers. Examples were found for instance of teachers explaining complex concepts in these small groups such as evolution of human species, or of teachers who would assist a group of students in reading difficult primary sources. Differentiated scaffolding exists also in various forms of hard scaffolding. Some pre-service teachers use hard scaffolds like procedures (GS-p) to compensate when students have a lack of procedural knowledge, for instance for assignments related to critical sourcing. Others use reading guidelines to assist the reading of a difficult text. Another type of scaffolding is when more or less explicit, suggestive or complex questions (GS-q) are used to cover comparable content. Here question prompting is used to increase or reduce the level of complexity of a lesson sequence. Examples were for instance found in which all students try to interpret historical sources, but some students receive extra question prompts to compensate for readiness. Likewise, additional sources and information (GS-so) such as a timeline, a concept map or a lexicon can be used to form an additional scaffold.

Tiered assignments are a third category of instructional adaptations found. It includes diverse practices, all of which have in common that students in one classroom work on assignments with diverging levels of complexity or with diverging content. Hence, any kind of historical enquiry allows to design tiered assignments. In some case students can choose themselves the level of complexity or the content focus of a particular tier. In other cases choice is based on a pre-assessment. In some simple examples teachers add additional exercises (TA-a) for students working more quickly than their peers, or they allow choice in content or sources (TA-s). These sources can be more or less complex or can focus on different aspects of the same phenomenon. One example was found in which a group studies the power of parliament, and another the power of the king in early modern England. Other ways of designing tiered assignments are with adaptations of the questions and prompts (TA-q) that students are given to do exercises. This implies that a teacher designs at least two versions of the same assignment. A specific type of tiered assignments is focused on inclusion of students with learning disabilities. These inclusive

adaptations (TA-i) range from giving students additional time for exercises to providing noise-cancelling headphones or printing worksheets in a larger font. Table 4 demonstrates with more detail how these instructional strategies were used to realize targets of history education. In several cases teachers combined two or more types of instructional adaptations to cater for heterogeneity.

Table 4

*Instructional adaptations to cater for heterogeneity in history classrooms [dataset 1]*

#	Main goal	Adaptations to content, process and product
1	Chronological awareness [change], using historical sources to substantiate evidente	TA-q [1] 2 levels of worksheets: different question prompts; [2] scaffolding guidelines, extended small group instructions
2	Chronologic awareness and interpreting historical maps	GS-sg [1] extended instruction vs. individual work using a procedural guideline; TA-a [2] additional exercise for faster students
3	Understanding and using historical concepts	GS-so [1] scaffolded use of lexicon; TA-q [2] 2 achievement levels of mastery which include open question vs. more prompted answer options
4	Chronologic awareness and conceptual knowledge	TA-a homework: preteaching of video
5	Describing human evolution	GS-sg; TA-a [1] rehearsal as extended instruction vs. additional worksheet with supplementary assignment; TA-so [2] tiered assignment using video or written source
6	Using historical sources and critical sourcing	GS-sg guided small group instruction or individual work
7	Different targets [chronology, concepts, sources]	CL-st station teaching, intended heterogeneous grouping CL-h
8	Using historical sources	GS-p differentiated use of scaffold guideline critical sourcing
9	Conceptual knowledge and causal relations	CL-Ss [1] group members take different roles during collaborative work; [2] small group instruction or independent work, assignment for SG is shorter GS-sg;

			TA-a	
10	Different targets [maps, concepts, sources]	TA-i	[1] individual inclusive adaptations (print in larger font, use of dictionary);	
		GS-p	[2] differentiated use of scaffolds (procedural guideline to use and interpret historical maps and sources)	
11	Critical sourcing	TA-q	more or less guided instruction, adapted worksheet contains more or less suggestive prompts	
12	Conceptual knowledge	TA-i	[1] choice in how to take notes;	
		TA-s	[2] subject choice sources	
13	Diverse targets [chronological awareness, causality, positionality]	GS-sg	extended instruction vs. individual work assignment	
14	Conceptual knowledge	CL-Ss	convergent expertise sharing; strong students present work to others, who take notes	
15	Substantiating evidence from sources, causal relations	GS-so	[1] embedded scaffold: concept maps;	
		CL-Ss	[2] use of diverse CL structures [placemat, think-pair-share, work in pairs]	
16	Critical sourcing	TA-q	[1] options to choose sources with more or less context given;	
		CL-Ss	[2] option work to in pair or alone	
17	Conceptual knowledge	TA-s	[1] 2 videos: rehearsal or additional content;	
		CL-Ss	[2] work in pairs convergent	
18	Conceptual knowledge	CL-h	intentional heterogeneous grouping, aimed at convergence	
19	Critical sourcing	TA-s	tiered by difficulty or content sources and divergent question prompts	
		TA-q		
20	Conceptual knowledge and critical sourcing	TA-a	additional assignment: crossword puzzle	
21	Conceptual knowledge	GS-p	guidelines for reading historical maps	
22	Substantiating with	GS-p	guidelines for reading and interpreting	



evidence form historical historical sources  
sources, assessing  
trustworthiness of sources

Source: own elaboration.

In the second dataset all student-teachers had used at least one of the strategies to cater for heterogeneity in any of the five lessons examined. In 26 of the 75 lessons however, no traces of lesson design were found that indicate proactive considerations of catering for differences among students. Table 5 provides a quantitative overview of the prevalence of instructional adaptations in the entire dataset.

**Table 5**  
*Prevalence of instructional adaptations found*

Collaborative learning		Guiding/Scaffolding		Tiered assignments	
CL-ss	22	GS-sg	10	TA-a	9
CL-h	5	GS-q	2	TA-s	12
CL-st	3	GS-p	12	TA-q	4
		GS-so	5	TA-i	2

Source: own elaboration.

### 4.3. Which instructional design do pre-service history teachers use to cater for heterogeneity?

Differentiated instruction implies proactively planned instructional design, in which instructional adaptations are not randomly chosen, but planned based on student assessment. Table 2 shows that diverse types of assessment are used to gain insight in student heterogeneity. Exit tickets (ET) are short conclusive exercises or tasks at the end of a lesson that are used to make instructional adaptations in a subsequent lesson. Also exercises (EX) at start of a lesson can be used for this purpose. A knowledge quiz (KQ) is sometimes organized to gain an overview of students' prior knowledge related to a particular subject. Digital software is sometimes used to gain speed for this purpose. In some cases, students were left free to make a self-assessment of their readiness or preferences (SA).

In the purposeful designed lesson plans (dataset 1) most teachers manage to connect assessment of heterogeneity with instructional adaptations, as is shown in table 2. In the naturally drawn lesson plans of the second dataset however assessment there was often no systematic alignment between assessment of students' needs and instructional adaptation. Cross-case analysis shows that in 50 out of 75 cases no assessment method was integrated in the lesson plan. In several cases assessment methods used to determine heterogeneity are not described, in other cases pre-service teachers rely on a standardized pre-assessment of students' needs, but then use diverse instructional adaptations which are not related to this pre-assessment. Nevertheless, even without providing context information, or using any kind of assessment of heterogeneity, diverse sorts of instructional adaptations are integrated in many of these students' lesson plans. Moreover, for both sources of data there is a noticeable difference between heterogeneity described by teachers, and the

instructional design that was subsequently described. In several cases it was found that teachers design a lesson that caters for another type of heterogeneity as was initially described. This was for instance so with several lesson plans in which it was reported that which learning disorders or difficulties occurred in the class group, but still took no effort to address these forms of heterogeneity.

## 5. Discussion and conclusion

Responding to the heterogeneity of a class group is considered by many education experts to be an ideal to pursue (Hall et al., 2006) there are many reasons to acknowledge diversity among learners in the instructional design of history lessons, such as for instance differences in prior knowledge or interest. Smets and Tuithof (2024) have shown that pre-service history teachers find it difficult reflect upon diversity among their students during lesson planning. Much literature on DI is pessimistic about the extent to which it is feasible for teachers to meet this ambitious ideal (Gaitas & Martins, 2017; Roy et al., 2013; Suprayogi et al., 2017). Nevertheless, this study shows that optimism is legitimate: many pre-service history teachers in this study succeeded in taking into account the heterogeneity of their class group by making adjustments to their lesson design. They proactively sought instructional strategies for students of varying readiness, learning profile or interest. It is however noticeable that they make relatively little use of the possibilities of interest-based differentiation. Figure 2 presents a revised version of the model that was introduced in figure 1, with aspects of DI implementation as found in this study.

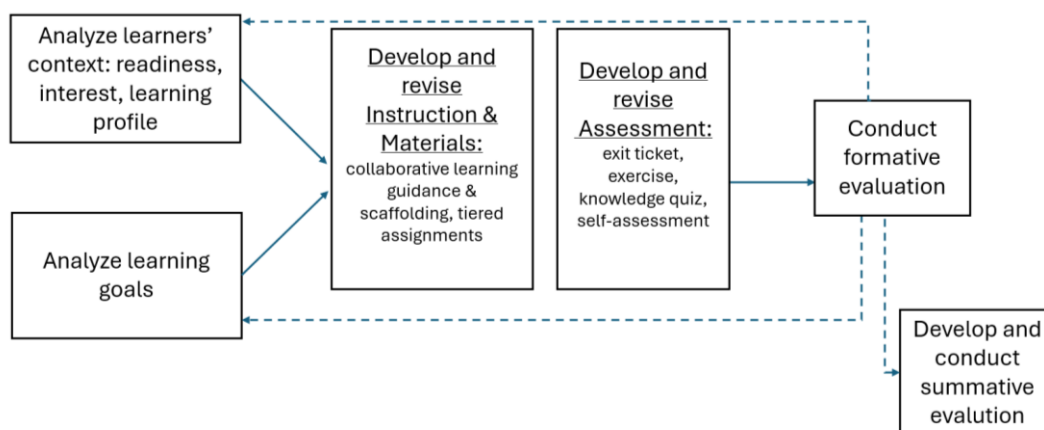


Figure 2. Differentiated Instruction in History Education. Source: own elaboration.

Although history and social sciences educators advocate the use and even confrontation of students' diverging perspectives as an educational resource (Wansink et al., 2018), no indications were found of pre-history history teachers doing so in this study. Multiple perspectives are not mentioned in the data as a source for differentiation, nor are they used in the instructional design. Collaborative learning strategies are described in research literature to pursue convergence between learners (Johnson & Johnson, 2014; Slavin, 1989). In the data that were studied, these instructional strategies were found regularly. They allow students to be actively engaged with tasks and assignments that they would not be able to process independently. Collaborative learning strategies are used by teachers in this study to plan inquiry-based history tasks that some students would not

be able to process alone. These strategies therefore appear to be an accessible way for history teachers to deal with readiness differences. Future research is needed to further develop and study the possibilities of interest-based differentiation in history. This might focus on how collaborative learning strategies can also yield potential to learn students handle multiperspectivity.

As the disciplinary turn in history education increasingly focusses on the mastery of diverse aspects of historical thinking (Lee & Ashby, R. 2000; Levesque & Clarke, 2018), differentiated instruction also needs to acknowledge differences in procedural knowledge. This study provides evidence of how history teachers do this. Differentiated guidance and scaffolding are used to rehearse or support procedures for students who have not yet completely mastered disciplinary procedures. Recent literature about doing-history increasingly stresses the importance of such procedures. Van der Eem et. Al. (2022) argue for instance to explicitly teach procedures to evaluate the trustworthiness of sources. Wineburg et al. (2013) also focused on the skills needed to read like an historian. In findings of this study scaffolding with additional or more explicit guidelines was provided to a particular group of students, or extended instruction was organized in small groups to support more structured historical inquiry. Scaffolding can also be a compensation for a lack of conceptual or linguistic prior knowledge.

Finally, in this study examples were found of teachers that differentiate by drawing on tiered assignments. Tiered assignments are used to offer students tailored historical inquiry tasks based on prior knowledge or interest. By incorporating more or less explicit questions into an assignment, or by providing more or less targeted sources or context information, the difficulty of assignments can be adjusted. As teaching historical thinking and reasoning is often regarded as challenging for many students (Körber, 2021), these options seem promising for the future of history education. It allows students to be actively engaged with historical inquiry, while being challenged at their own zone of proximal development.

Sometimes objections are raised about differentiation because of a risk of stereotype threat or low expectations (Dweck, 2015; Steel & Aronson, 1995). This risk seems to be at hand for instructional design in which differentiated scaffolding or tiered assignments are used. Indeed, these strategies require very well-considered decisions from teachers, for instance about what procedure to use, when exactly to phase out scaffolding, or how to choose who makes a more complex assignment. Tuithof et. al. (2019) argued that even expert history teachers find it difficult to make such considerations. Some examples in this study point to this risk of reinforcing inequality among students. In the lesson plans that were examined, no systematic alignment of student targets and instructional strategies was established. This observation can be explained by the fact that the data in this study are based on lesson plans of novice teachers. It may be even more difficult for them than for experienced teachers to make a correct assessment of their students' needs. Moreover, the data in this study also point to factors that make assessing students' readiness, interest or learning profile even more difficult for history than for other subjects. Different participants in this study described their students' prior knowledge in vague or unspecified terms, even though they had learnt about Tomlinson's recommendation to be specific about students' readiness. Likewise some students use cooperative learning strategies in which students are assigned to groups based on self-assessment, rather than assigning them on formative assessment evidence. The reason for this may be explained by history being a 'small subject' in which teachers have relatively few contact hours with their students. It is

also a course in which student readiness is not easy to determine (Biglan, 1973, Lee & Ashby, 2000). To a certain extent, the necessary prior knowledge in various lessons is non-cumulative (Portnoy & Rabinowitz, 2014), or why others often. A more systematic and structured use of assessment for learning as a data source to inspire teachers' decision-making could help avoiding stereotype threat.

## 6. Implications and limitations

The implications of this study for the theory and practice of differentiated instruction are important. Contrary to prior theory on differentiated instruction (Tomlinson, 2003) the categories and the subtypes found are grounded on empirical evidence. These categories allow further empirical research that further develops the theory. Moreover, they allow to design and study future programs of teacher education in the field. As data were collected within the specific context of history teaching these findings are of primary use in the field of history and social sciences teaching. Further research could scrutinize the external generalizability of the categories and subtypes of instructional adaptations to other subjects like language teaching, STEM-didactics or vocational education.

This study is based on a qualitative content-analysis of pre-service teachers' lesson plans, and on pre-service teachers' explicitly solicited reflections about DI. As lesson plans were drawn in a structured template, they allow to get detailed data on these teachers' instructional design. It is a unique source of data as only novice teachers draw lesson plans that are sufficiently detailed to allow detailed analysis. Lesson plans however have their limitations as a data source. It cannot be assumed that the full complexity of addressing heterogeneity in the classroom is captured in a written document, nor can it be assumed that novice teachers are capable of grasping the full complexity of student heterogeneity, and responding to it. In the classroom constantly unexpected situations emerge, many of these require teacher-decisions regarding heterogeneity. In recent publications Tomlinson and Imbeau describe the tone of the class climate a fourth possibility to address heterogeneity, next to adaptations in content, process or procedure (2023). This aligns with the plea of many history educators to use multiperspectivity as an educational resource (Kropman et al., 2019; Wansink et al., 2018). It is our firm belief that many history teachers do so, also many of the teachers that were involved in this study. Still, the data collected do not allow to get insight in this aspect of differentiated instruction. Further research for instance based on classroom observations could provide more insight in this aspect of differentiated history education.

## Specific contribution of the authors

The author is responsible for the content of this work.

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## Annex

**Table 6**  
*Instructional design coding structure*

1) Assessment instruments		2) Context analyses		3) Instructional strategies	
			Readiness		Tieres assignments
AU	Assessment unknown	RCK	Conceptual knowledge	TA-a	Additional exercises
ET	Exit ticket	RPK	Procedural knowledge	TA-s	Different content or source
KQ	[digital] knowledge quiz	RL	Differences in language mastery	TA-q	More or less complex questions
Ex	Exercise	RPa	Different pace	TA-i	Inclusive adaptations
SA	Self-assessment	RD	Readiness diverse		
FC	Free Choice	RU	Readiness unspecified		
Ob	Student observation				
4) Interest		5) Learning profile		6) Guiding/Scaffolding	
IC	Content	LI	Individual educational needs	GS-sg	Small group instruction
		LP	preferences	GS-q	Explicit question prompts
				GS-p	Procedural guidelines
				GS-so	Additional sources and information
7) Collaborative learning					
CL-ss	Cooperative learning structures				
CL-h	Intentional heterogeneous groups				
CL-st	Station teaching				

Source: own elaboration.