



## Instructing students in history museums: A systematic literature review

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### ABSTRACT

History museums offer a wide range of possibilities to engage students in learning about the past, as well as about history. When compared to scholarly research on other types of museums, their educational promises are underexposed. Within these promises, instructional practices and instructional agents such as museum educators and history teachers play an important role. In order to get a view on research methods and findings regarding instruction within history museums, we conducted a systematic literature review. Three scholarly databases were searched, yielding 45 peer-reviewed journal articles. Those have been fully screened, analysed and compared regarding their research design (in terms of research questions, participants involved, and theoretical and methodological approaches) and their research outcomes (in terms of what they revealed about the content, the nature and the approach of instruction in history museums). Review outcomes reveal four different types of research designs, ranging from describing instructional practices to studying beliefs or a combination thereof, or a focus on the relationship between instruction and students' learning. Within each of these types, great variety was observed regarding the involved participants and the theoretical and methodological approaches. Besides, the review distinguished three areas of research outcomes, namely the goals of instruction, the instructional methods and the relationship between schools and museums before, during and after instruction. Findings within these areas reveal that certain tensions exist, for example between cognitive and emotional-affective learning goals, also related to disciplinary (historical) and civic educational goals. Other tensions were to be distinguished between student- and teacher-centred instructional methods and between beliefs and practices regarding collaborations between schools and museums. Taken together, these research outcomes yield important implications for instructional practices in history museums and for future scholarly research on them.

### KEYWORDS

History museums, History education, Instruction, Museum education, Systematic literature review

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## Introduction

Throughout the twentieth century, and particularly towards the end of it, museums increasingly focused on their educational role. In addition to showcasing heritage and material culture, they started to exhibit designs and develop activities to meet educational goals and to support visitors' learning, ranging from young children to older adults (Hein, 1998; Hooper-Greenhill, 1999). Sometimes, museums are considered 'informal learning contexts', meaning that specific guidance or instruction is absent, while visitors are guided spontaneously by their own interests, goals or knowledge during visits (Pierroux, Knutson & Crowley, 2022). The educational potential of museums also received growing attention within primary and secondary schools. These increasingly acknowledged museums as an additional context for learning and instruction, because of their complementary role to formal classroom education and the possibilities they offer to widen and deepen various kinds of students' knowledge (Vadeboncoeur, 2006). Museum educational activities do not only enhance cognitive learning, but also enable exciting, active and hands-on learning processes that motivate learners intrinsically, include affective-emotional or empathetical reactions, and enable identification processes (Falk & Dierking, 2000, 2013). Through integrating museum visits in the primary or secondary school curriculum, informal learning experiences accompanying these visits are transcended. Museum educational processes can mirror and connect to both instructional strategies and contents from formal learning contexts, then constituting a form of 'non-formal learning' (Cox-Petersen et al., 2003; Vadeboncoeur, 2006).

The first two decades of the twenty-first century testified to a significant increase in research addressing educational processes for primary and secondary school students within museum contexts (Andre, Durksen & Volman, 2017; Johnson, 2016; Pierroux, Knutson & Crowley, 2022; Sandlin, Schultz & Burdick 2010). Most of this research has been conducted within the context of science museums, art museums or natural history museums. History museums (and by extension historic sites, heritage sites or memorial sites), communicating historical narratives often supported by a selection of artefacts or material culture, have been far less considered as the object of research (Andre et al., 2017; Marcus, Levine & Grenier, 2012; Schep, van Boxtel & Noordegraaf, 2015). In addition, previous research has mostly focused on learning and learners' experiences and less on instructional practices and instructional agents' perspectives (Marcus et al., 2012; Zarmati, 2020). Combined, this raises the question of which research has specifically addressed instruction in history museums and what this research has yielded.

Wallace-Casey (2016, p. 373) stated that empirical research on both learning and instruction within history museum contexts does not merely consist of gaps but of 'huge chasms', particularly regarding the analysis of the fostering of 'historical thinking' in a history museum. After its launch at the end of the 1970s in a British research context, this concept has been increasingly put forward as a major goal for history education. Through introducing students to the ways in which historians (re)construct historical narratives, historical thinking aims to approach history education from a disciplinary perspective. Over the past four decades, the concept became very influential, as it has been adopted in the history curricula of many Western countries (Seixas,

2017). Research on theory and practice of history teaching has, since then, introduced related notions such as 'historical literacy', mainly influential in the United States, or 'historical reasoning' in the Netherlands (Lévesque & Clark, 2018; van Drie & van Boxtel, 2008; Wineburg, 2001). In Germany and several Scandinavian countries, the concept of 'historical consciousness' has been, and still is more central to history education, among others drawing upon the work of history philosopher Jorn Rüsen (2004). His theoretical writings have led to curricula in which the emphasis lies on the ways in which students use narratives of the past to orient themselves in the present and the future (Karlsson, 2011; Körber, 2011).

Despite the variations that exist between these concepts and the way they are concretely operationalized in various curricula, history education scholars agree on common denominators (Seixas, 2017). Consensus exists about the importance of students' knowledge of what happened in the past ('knowing history') and of their understanding of disciplinary practices such as source analysis and the construction of historical narratives ('doing history'). Knowing and doing history combined allow for critical reflection on representations and uses of the past in the present, and hence on the complex relationship between past, present and future (Körber & Meyer-Hamme, 2015; Seixas & Morton, 2013; van Drie & van Boxtel, 2008; Van Nieuwenhuyse, 2020; Wineburg, 2001). From this description, it becomes clear that not only a cognitive approach is included here, mirroring the activities of professional historians, but also a sociocultural one that includes students' own emotional and affective perspectives, related to, among others, identity construction and values. An often used concept that could serve as an illustration here is 'historical empathy'. Scholars initially defined this in a rather cognitive way (e.g. Lee & Ashby, 1987) as the reconstruction of the perspectives of people from the past within a broader historical context. More recent, an additional emphasis has been added to stress that affective engagement with historical agents is inseparable from this cognitive process. Historical empathy includes, according to Barton and Levstik (2009) and Endacott and Brooks (2013), showing interest in historical agents, caring for them and (morally) responding to consequences of past events and actions in the present.

The learning and teaching of historical thinking and related concepts have been extensively examined in history classroom contexts (Lévesque & Clark, 2018; Seixas, 2017; Wallace-Casey, 2016). Most history education scholars agree upon the crucial role of instructional agents in learning students "to speak and write the language that historians call history" (Levisohn, 2017, p. 629). Nevertheless, compared to classrooms, far less is known about how instructional agents do so within history museums. The same applies to the question of how visiting them relates to classroom learning and instruction (Marcus et al., 2012; Wallace-Casey, 2016). This brings us to the main aim of this systematic review, namely to uncover how previous peer-reviewed scholarly journal articles have been engaging with instruction in history museums towards school students. We aim to bring the perspective of instructional agents such as (pre-service) history teachers and museum educators, referring to all educational staff at museums such as members of educational services and museum guides, to the fore. We consider instruction in both a direct way (through physical instruction) and an indirect way (through designing activities and resources for museum visits). The following two research questions are central to our study: (1) In which ways have previous studies designed their research on instruction towards primary or secondary students in a history museum context in terms of research questions, involved participants, and theoretical and methodological approaches? (2) What do the research outcomes of these studies reveal about the content, the nature and the approach of instruction in history museums and in relation to instruction in schools?

## Methodology

To answer these research questions, a systematic literature review study has been conducted, using explicit methods to identify, select, critically evaluate, and interpret relevant research literature in view of answering specific research questions (Newman & Gough, 2020).

**Selection of studies**

Table 1 summarizes the five-step literature selection procedure (Petticrew & Roberts, 2006), executed through searching within three major scholarly databases for educational research: Web of Science, Scopus and ERIC. We looked for English-language peer-reviewed journal articles from the year 2000 onwards, when research on non-formal museum education steadily started to increase. They at least needed to partially address instructional processes within the specific context of history museums. At the same time, they had to be related to history and/or social studies education, regardless of whether the curriculum in the country of research focused on historical thinking, historical literacy, historical consciousness or historical reasoning as a central concept. The following keywords were therefore part of a search string: ‘histor\*’ or ‘social studies’, combined with ‘teach\*’ or ‘instruct\*’, ‘educat\*’ and ‘museum’ or ‘heritage site’ or ‘historic site’. Two exclusion criteria (‘science’ and ‘natur\*’) were explicitly added to the string to assure that research on science and natural history museums was left out.

In total, 678 studies emerged out of the search, whose titles and abstracts were screened through applying an additional set of five exclusion criteria: (a) studies that focused on other types of museums than history museums; (b) studies that *exclusively* focused on learning processes, learning outcomes or learners’ perspectives without considering instructional practices or implications for instruction; (c) studies that only considered virtual visits to history museums without taking into account (intended) physical visits; (d) studies focusing on pre-school or higher education and (e) studies on teacher professional development in the setting of a history museum, in which (pre-service) teachers or museum educators were considered as learners and not as instructional agents. A total of 54 studies remained after the application of these criteria; after the removal of duplicates, 36 studies remained. In a following step of the selection process, the ‘snowballing technique’ was applied, meaning that the reference lists of these 36 studies were screened in search for other relevant studies, yielding ten other relevant peer-reviewed journal articles matching the inclusion criteria.

To increase the reliability of the selection process, interrater agreement was calculated. The first and last author independently screened 10% of the studies remaining after the first step, based on the exclusion criteria. Their coding was compared and an interrater reliability of Cohen’s Kappa = 0.9 was achieved, indicating excellent agreement (Banerjee et al., 1999). The few discrepancies that evolved from the coding process were resolved through discussion. The sample of 46 journal articles was then full text screened through close reading. After that, only one study was still excluded because of its sole focus on learning and learners’ perspectives (Uztemur, Dinc & Acun, 2019).

**Table 1**

*Literature selection process*

Step	Description	Remaining studies
1	Search within three databases (Web of Science, Scopus, ERIC)	678
2	Screening of title and abstract through application of exclusion criteria	54
3	Removal of duplicates	36
4	Adding relevant literature through snowball-method	46
5	Exclusion through full-text screening	45 (final sample)

## **Data analysis**

To analyse the 45 studies, a coding scheme was designed in which various categories were distinguished. First, descriptive characteristics were mapped: (a) the year of publication; (b) the country where the research was conducted; (c) whether the research addressed history museums or rather historic or heritage sites (or a combination of them); (d) the educational level (primary or secondary) that was considered and (e) which specific historical themes, represented in the museums, were discussed. Second, information about the focus of the studies' research design was collected: (a) the research questions guiding the studies; (b) the participants involved and (c) the theoretical frameworks and methodological approaches used. Third, information was collected on research outcomes by looking at: (a) major findings regarding instruction and (b) implications for practice and recommendations for the facilitation of history museum instruction within the context of history education.

By means of a within-case analysis, each study was first analysed on its own. Subsequently, through means of a cross-case analysis, the various categories defined above were compared for the whole literature sample. That enabled a qualitative cross-case comparison in search for analogies, patterns or contradictions between cases and in order to come to overarching categories for each of the two research questions (Miles, Huberman & Saldaña, 2014). After cross-case analysing the data, the resulting categories were reviewed and discussed with the last author, leading to consensual agreement.

## **Results**

### ***Descriptive profile of the literature sample***

Over a period of more than twenty years, 45 studies addressing instruction in history museums can perhaps not be considered much. However, a recent increase of attention towards instructional perspectives on history museum education was observed. The majority of the studies included in the final sample (67%) was published in the last five years (up until 2021), while the other 33% was published between 2000 and 2016. Most research (in total 26 studies) was conducted in Anglo-Saxon countries such as the United States (seventeen studies), Australia (four studies), Canada (two studies) and the UK (three studies). A smaller amount of the research (in total sixteen studies) took place in European countries such as the Netherlands (four studies), Belgium (one study), Spain (five studies), Italy (one study), Denmark (one study), Estonia (one study), Poland (one study) and Sweden (two studies). Other countries were Turkey (two studies) and Belize (one study), although this last contribution was written by American scholars. The vast majority of the research considered history museums as object of research (31 studies), while ten studies considered historic or heritage sites and four studies combined multiple institutions within their research design. Regarding the main educational level that researchers built their research on, most studies, eighteen, considered the secondary level, while twelve studies considered the primary level, and twelve studies combined primary and secondary school education. In three cases, no particular focus was laid on primary or secondary school education, using more general terms such as 'students' or 'school visitors'.

Analysis of the historical themes that were addressed within the history museums revealed that various themes occurred, as table 2 shows.

**Table 2**

*Historical themes addressed within the history museums and heritage sites*

Historical theme	N	Examples
'Difficult histories'	19	Colonial heritage, buildings and museums (e.g. Mission Dolores historic site, Port Arthur historic site), heritage of slavery (e.g. Jefferson's Monticello, Wilberforce House Museum, NiNsee exhibition), war heritage, museums or memorials (e.g. Australian War Memorial, Exile Memorial Museum, Siege Museum and Museum of Free Derry), Holocaust museums and memorial sites (e.g. Holocaust Memorial Museum, Auschwitz-Birkenau, Illinois Holocaust Museum)
Not specified/addressed	10	
Local and regional history	10	Local and regional historic sites or community history museums (e.g. a Creole community archaeology museum, local archaeological museums in Alicante and Murcia, Burnie Regional Museum, Chicago History Museum, Fairfield Museum)
Socio-cultural history	5	Religious heritage (e.g. abbey ruins), old school buildings, industrial history museums (e.g. Industrial Heritage Museum of Bologna, Tsongas Industrial History Centre), a migration museum (e.g. Red Star Line Museum)
National history	1	National historic sites and archives (e.g. George Washington's Mount Vernon)

The table shows that 'difficult histories' were most addressed within the literature sample. Within the context of history museums and historic sites, Rose (2016, p. 28) defines these histories as "describing memories of pain, suffering, oppression, and grief that are emotive, thereby inciting anxiety, resistance, and stress for their audiences". Examples addressed in the reviewed sample were topics such as slavery, the Holocaust, colonialism or war and violence. No particular historical theme was specified in ten studies, which did not include a particular museum but rather dealt with history museums in general, for example focusing on instructional agents' general beliefs regarding museum visits. Less frequently considered themes concerned local and regional histories of towns, cities or communities and their heritage, or museums that focus on socio-cultural or national history. Table 2 provides concrete examples for each theme.

***Analysis of studies' research design focuses***

Four overarching categories have been distinguished through the analysis of the reviewed studies' research design focuses. Table 3 shows these categories, in relation to the various participants that were incorporated. The research design focuses of the studies in these four categories range from (1) the description and/or analysis of instructional practices; (2) the analysis of the relationship between instructional practices and students' learning; (3) the analysis of the beliefs of pre-service teachers (PSTs) on visiting history museums with students to (4) the analysis of the relationship between beliefs and (self-reported) instructional practices.

**Table 3**

*Overarching categories of research design focuses*

Focus in research design	Participating instructional agents				
	Pre-service teachers	Experienced teachers	Museum educators	Museum educators and experienced teachers	No participants
<b>Category 1. Instructional practices (16)</b>			Gomez-Hurtado, Cuenca-Lopez & Borghi, 2020; Tigert, Fotouhi & Kirschbaum, 2021; Zarmati, 2020	Escribano-Miralles, Serrano-Pastor & Miralles-Martínez, 2021a	Brand, 2013; Davis & Goldberg, 2019; Grim et al., 2017; Grever, de Bruijn & van Boxtel, 2012; Harrison-Buck & Clarke-Vivier, 2020; Leftwich & McAllen, 2018; Marcus, 2007; Marcus & Kowitz, 2016; McKernan, 2017; Moisan, 2015; Munn & Wickens, 2018; Paulsen, 2019
<b>Category 2. Relationship between instructional practices and students' learning (12)</b>		Coughlin, 2010; Harker & Badger, 2015; Trofanenko, 2006; Trofanenko, 2014; Uppin & Timoštšuk, 2019; Wallace-Casey, 2016	Keenan, 2019; Savenije & de Bruijn, 2017	Ferrer-Fons & Rovira-Martínez, 2021; McCully, Weiglhofer & Bates, 2021; Meeus, Janssenswillen, Jacobs, Wolfaert & Suls, 2021 (pre-service teachers); Spalding, 2011	
<b>Category 3. Pre-service teachers' beliefs about visiting history museums with students (4)</b>	Felices-De la Fuente, Chaparro-Sainz & Rodríguez-Pérez, 2020; Görmez, 2020; Hubbard & Odebiyi, 2021; Uslu, 2020				
<b>Category 4. Relationship between beliefs and instructional practices (13)</b>	Brett, 2014	Flennegård & Mattsson, 2021; Gonzalez-Velazquez, Feliu-Torruella & Iniguez-Gracia, 2021; Marcus, Levine & Grenier, 2012; Stolare, Ludvigsson & Trenter, 2021	McKernan, 2018; Schep, van Boxtel & Noordegraaf, 2018; Richardson, 2021; Wright-Maley, Grenier & Marcus, 2013	Escribano-Miralles, Serrano-Pastor & Miralles-Martínez, 2021b; Klein, 2017; Noel and Colopy, 2006; Wojdon, 2018	

*Category 1: focus on instructional practices*

The sixteen studies in this category focused on instructional practices in a history museum context in two different ways. Twelve did so without incorporating the participation of instructional agents. Of these twelve, ten studies were descriptive and approached instruction in the following ways: through (1) suggesting possible pedagogical approaches for teachers to visit history museums with secondary school students, in order to raise their understanding of public representations of history (e.g. through encouraging them to consider the role of museums within larger political or societal debates) (Marcus, 2007); (2) describing more general principles behind the pedagogical approaches of particular history museums related to sensitive topics such as the Holocaust, slavery or creole history (e.g. a focus on polyvocality, inclusivity or personal stories)

(Brand, 2013; Davis & Goldberg, 2019; Grim et al., 2017; Harrison-Buck & Clarke-Vivier, 2020) or (3) describing the design of concrete resources to facilitate instruction in a museum, e.g. an educational role play that features life at an abbey in the Middle Ages, the use of 'museum footnotes' or a workshop that aimed to foster students' skills to analyse historical artworks (Leftwich & McAllen, 2018; Marcus & Kowitt, 2016; Moisan, 2015; Munn & Wickens, 2018; Paulsen, 2019). Of these twelve, two studies approached instruction analytically, beyond the descriptive level. They studied the contents of educational resources accompanying exhibitions on slavery history (Grever, de Bruijn & van Boxtel, 2012) or analysed a particular exhibition while documenting the opportunities for instruction about war histories supported by war heritage (McKernan, 2017).

These twelve studies were characterized by an absence of explicitly stated research questions. They rather formulated (sometimes vague) 'research aims' and did not specify a particular methodological approach. This might be due to their aim to be mainly descriptive, conceptual or practice-oriented in nature. Nevertheless, some clearly included more discipline-specific theoretical concepts. Three studies focused rather generally on various aspects of historical thinking (Marcus, 2007; Marcus & Kowitt, 2016; Munn & Wickens, 2018). Others integrated more particular concepts such as polyvocality, stressing the need for engagement with multiple perspectives (Davis & Goldberg, 2019) or historical distance, referring to the 'temporal dimension' of history or the distance between past and present (Grever et al., 2012).

A minority of studies here, namely four, also examined the application of instructional practices through incorporating the participation of instructional agents. One study quantitatively analysed questionnaires to get a view on how museum educators and experienced teachers prepared and designed instructional activities (Escribano-Miralles, Serrano-Pastor & Miralles-Martínez, 2021a). The other three adopted a qualitative approach: through means of interviews, document analysis or physical observations, specific instructional practices were examined, such as inclusive heritage education practices (Gómez-Hurtado, Cuenca-López & Borghi, 2020), museum educators' questioning practices (Tigert, Fotouhi & Kirschbaum, 2021) or museum educators' more general approach towards instruction (Zarmati, 2020). Theoretically, these studies used a variety of frameworks, both general pedagogical, such as the Vygotskian sociocultural theory of learning (Tigert et al., 2021) as well as more specific ones such as heritage education (Gómez-Hurtado et al., 2020), or a combination through adopting a 'learner-based model of heritage education' (Escribano-Miralles et al., 2021a). Zarmati (2020) introduced the concept of pedagogical content knowledge (PCK) at the beginning of her study. She did, however, not examine educators' PCK as such, nor the various constituent parts of it (their content knowledge and pedagogical knowledge). She mainly touched upon the concrete strategies museum educators used while providing instruction in history museums, which were considered by this author as an emanation of PCK.

### *Category 2: focus on the relationship between instructional practices and students' learning*

The twelve studies here examined how particular instructional practices influenced students' learning about history. Methodologically, these studies adopted a qualitative (nine studies) or mixed-methods approach (three studies). They mapped the relationship between instructional practices and students' learning by firstly analysing the design or enactment of instructional practices. Secondly, students and/or instructional agents were interrogated before and after engaging in the designed or enacted instructional practice, through means of questionnaires and/or individual or focus group interviews.

Both the effects of the design process as well as the enactment of physical instructional practices on students' learning were examined. Regarding the design process, Coughlin (2010) for example investigated the effects of a collaborative approach between multiple instructional agents towards the design of instructional resources. Meeus et al. (2021) measured the effects of engaging students in educational packages that were co-designed by museum educators and pre-



service teachers according to the principles of design-based research. Uppin and Timoštšuk (2019) designed an educational activity themselves and investigated the learning outcomes generated by the activity. Harker and Badger (2015) and McCully, Weiglhofer and Bates (2021) examined the design of an exhibition and how its educational resources created learning opportunities, contextualising these through interviews with teachers and museum educators. Regarding the enactment of physical instruction, several studies observed learning sessions led by museum educators (Keenan, 2019; Savenije & de Bruijn, 2017), experienced teachers (Trofanenko, 2006, 2014) or by both together (Ferrer-Fons & Rovira-Martínez, 2021; Spalding, 2011; Wallace-Casey, 2016).

The theoretical focus in these twelve studies was strongly put on disciplinary concepts. Two studies focused on secondary school students' historical empathy skills, for example through engaging them in instructional practices about personal and migrant stories related to the Second World War (Savenije & de Bruijn, 2017; Uppin and Timoštšuk, 2019). Four studies put central the consideration of multiple perspectives on national and colonial pasts, including affective-emotional and subaltern perspectives (Keenan, 2019; Meeus et al., 2021; Trofanenko, 2014; McCully et al., 2021). Three studies examined how students were engaged in deconstructing historical narratives, such as stereotypical historical representations about slavery (Spalding, 2011), or the underlying master narrative in the museum (Trofanenko, 2006; Wallace-Casey, 2016). One study focused on how disciplinary goals (in this case historical empathy, the relationship between history and memory and multiple perspectives) related to civic educational goals, such as forming students into active, responsible and engaged citizens (Ferrer-Fons & Rovira-Martínez, 2021). Two studies more globally addressed disciplinary practices through focusing on students' critical thinking (Harker & Badger, 2015) or on primary students' basic chronological reasoning skills (Coughlin, 2010).

#### *Category 3: focus on pre-service teachers' beliefs on visiting history museums with learners*

This category approached history museum education from the perspective of the beliefs of one specific group of instructional agents, namely pre-service history teachers (PSTs). The four studies here all interrogated PSTs by means of a questionnaire with both open- and closed-ended questions, enabling qualitative as well as quantitative analyses. Thematically, questionnaires focused on why PSTs would visit history museums with students, what their personal stances towards museum education were and in which way they would incorporate museum visits into the curriculum. Hubbard and Odebiyi (2021) for example aimed to map PSTs dispositional thinking profile towards museum education through an explanatory factor analysis based on a questionnaire. This included their willingness and motivation, their self-perceived capacity and their instructional prospects to incorporate museum visits in social studies lessons. Görmez (2020) and Uslu (2020) interrogated PSTs more generally with broad open questions about their opinions on the role of museums in social studies education. Felices-De la Fuente et al. (2021) conducted a mixed-methods study in which they asked PSTs after the heritage resources they found most suitable for the teaching of history. Theoretically, these studies did not focus on discipline-specific concepts, but rather started from more general pedagogical frameworks focusing on teachers' educational beliefs (e.g. related to their motivation, their self-assessment and prior knowledge).

#### *Category 4: focus on the relationship between beliefs and instructional practices*

The thirteen studies in this category examined the relationship between instructional agents' beliefs and practices, in very diverging ways. Some analysed instructional practices through physical observation or through a performance task, combined with the interrogation of participants' beliefs through means of a questionnaire or an interview (Brett, 2014; McKernan, 2018; Schep et al., 2018; Klein, 2017). Klein (2017) for example examined the curriculum decisions of history teachers and museum educators, regarding a fictitious exhibition on the sensitive topic of Transatlantic Slave Trade, through means of a selection task combined with an

individual interview. The participants were stimulated to self-reflect upon important issues of teacher knowledge such as social identity, disciplinary knowledge and the students' perceived knowledge. Schep et al. (2018), as another example, focused on museum guides and examined the competencies they believed to be necessary to guide a class group through a museum, by both interviewing and observing the guides.

Other studies related beliefs and practices through interrogating instructional agents about their beliefs, while they self-reported on their practices. This was usually based on questionnaires, in some cases supported by interviews for an in-depth analysis of a selection of participants within the sample (Flennegård & Mattsson, 2021; González-Vázquez, Feliu-Torruella & Íñiguez-Gracia, 2021; Marcus et al., 2012; Richardson, 2021; Wright-Maley, Grenier & Marcus 2013; Escribano-Miralles, Serrano-Pastor & Miralles-Martínez 2021b; Noel & Colopy 2006; Stolare, Ludvigsson & Trenter, 2021; Wojdon, 2018). Questions dealt with a variety of topics such as the collaborative and co-operative relationship between schools and museums, and the mutual perception, expectations and goals of teachers and museum educators (Escribano-Miralles et al., 2021b; Noel & Colopy, 2006; Wojdon, 2018; Wright-Maley et al., 2013).

More than half of the studies in this category did not specifically lean on a particular pedagogical or historical framework (Flennegård & Mattsson, 2021; Wojdon, 2018). Some rather provided a general outline of (museum) learning theories such as constructivist learning or Falk and Dierking's contextual model of learning (Marcus et al., 2012; Noel & Colopy, 2006), or of historical thinking applied to a history museum in general (Brett, 2014; Escribano-Miralles et al., 2021b; Marcus et al., 2012; Wright-Maley et al., 2013). Other studies were more specific and combined general pedagogical frameworks with more discipline-related ones. González-Vázquez et al. (2021) for example related the framework of 'human rights education' to 'historical memory'. Klein (2017) combined a focus on 'teacher knowledge' (defined as "the intersection of various types of knowledge, values, and beliefs", p. 77) and on 'historical distance', while Schep et al. (2018) applied the concept of 'competencies' to instruction in a history museum. Other researchers used the framework of 'affective practices' or 'emotional labour', in order to examine affective-emotional dimensions of dealing with sensitive histories (McKernan, 2018; Richardson, 2021; Stolare et al., 2021).

### ***Analysis of studies' research outcomes regarding instruction***

Over the four categories of research design focuses distinguished above, we found three overarching categories of research outcomes regarding instruction through cross-case analysing the reviewed studies' findings. A first category consists of the goals for instruction, while the second touches upon instructional methods and the third elaborates on the relationship between schools and museums before, during and after instruction.

#### ***Category 1. Goals for instruction: balancing cognition and affect between disciplinary history education and citizenship education***

This first category of research outcomes related to instruction concerns the goals to be pursued through providing instruction in history museums. Within this category, taking the outcomes of the various studies into account, a tension between the pursuit of cognitive and affective goals was observed. This tension closely connects to the relationship between goals for disciplinary history education (e.g. a focus on historical thinking or related concepts) and citizenship education (e.g. a focus on identity construction, the transmission of norms and values or pursuing social justice). The example of engaging students in considering the relationship between past and present, an often returning goal for instruction throughout the studies, will be used to illustrate this tension.

Descriptive studies of instructional practices elaborated on how this relationship can be cognitively dealt with within history museums. Marcus (2007) for example modelled how teachers can foster students' disciplinary understanding of the relationship between past and

present through asking questions such as how present-day political and societal debates influence how history museums (re)present the past. Marcus and Kowitt (2016) developed so-called 'museum footnotes'. They form a concrete resource that helps asking such questions, for instance regarding the goals and constraints of exhibition designers. They enable students to gain insight in how curators construct historical narratives supported by certain objects, considering particular perspectives.

The relationship between past and present can also be engaged with from an affective-emotional perspective, as the example of historical empathy shows. Through telling personal stories about the past (for example individual migration stories), and encouraging learners to empathize with the historical actors in that story, museum exhibitions can elicit empathy among students and trigger affective-emotional reactions in the present (Ferrer-Fons & Rovira-Martínez, 2021; Savenije & de Bruijn, 2017; Uppin & Timoštšuk 2019). González-Vázquez et al. (2021) for example observed that experienced history teachers highly valued a goal that addressed students' ability to show empathy and solidarity with those who suffer(ed) injustice, whether in- or outside their country. Flennegård and Mattsson (2021) analysed teachers' aims when visiting Holocaust memorial sites and concluded that they placed much emphasis on empathizing with the victims, and overall focused on learning about human rights, norms and values. They found that the visit excited a rather one-sided emotional reaction among students, not triggering cognitive thinking processes about the Holocaust. Students in this way for instance did not build an understanding of the mechanisms leading to the Holocaust, of the perpetrators' motives or of how and why (ordinary) people became bystanders, perpetrators, or resistant fighters.

This example shows that affective-emotional engagement might possibly result in a limited, sometimes even simplified way of dealing with the connection between past and present as it can outweigh cognitive learning processes. Such engagement rather results into using the past in order to let students think about their role as critical citizens within present-day societal challenges. As a consequence, history education is rather considered from a democratic citizenship approach. Gomez-Hurtado et al. (2020) found similar approaches: they for example concluded that a main aim of an educational activity in an Italian history museum was to develop students' identification processes with the heritage in the museum. Munn and Wickens (2018) pointed to instructional goals such as the creation of a culture of thinking around civic ideals based on historical examples. Others focused on the aim of fostering dialogue on sensitive issues in current society such as racism, by insisting on polyvocality and multiple perspectives (Davis & Goldberg, 2019; Grim et al., 2017).

Extensive affective engagement and a major focus on the present can, according to various studies, lead to decontextualization, homogenization and oversimplification. Certainly sensitive historical topics, that evoke strong emotions and parallel contemporary events, risk to hinder a cognitive approach and understanding of the past event at stake (Spalding, 2011; Uppin & Timoštšuk, 2019). To effectively balance cognition and affect in relation to disciplinary thinking, scholars claim that an explicit emphasis on the distance between past and present in instructional practices enables students to make qualified claims about the present (or about contemporary issues) while making use of informed and contextualized historical narratives. Through integrating historical distance and affective historical empathy at the same time, students will understand that the past is 'a foreign country' (Grever et al., 2012; Klein, 2017). Savenije and de Bruijn (2017) for example analysed how personal stories from the Second World War acted as a stimulus for engaging students emotionally. Besides, the museum educator's explicit focus on multiple perspectives also guided them towards a broad contextualized cognitive understanding of the historical period considered. McCully et al. (2021) concluded that it heavily depended upon the classroom teacher's emphasis on adopting a critical mindset while visiting history museums whether students also engaged cognitively with sensitive and emotional issues in the past or not. They observed that within a critically prepared class group, combining a strong evidential base with the emotional power of personal testimonies stimulated students to question their previous understandings, guiding them towards cognitive engagement with other perspectives.

Research outcomes dealing with instructional goals rather starting from instructional agents' own beliefs than from analysis of instructional practices, revealed that the connection of cognitive and affective engagement differed for various instructional agents. Richardson (2021) found that, unlike the fact that museum educators themselves felt emotionally involved when confronted with difficult histories such as the Holocaust, they intentionally used the technique of 'distancing' themselves emotionally in order to remain in their 'professional role' to provide instruction. The research of Stolare et al. (2021) shows that primary school teachers saw no contradiction between cognitive and affective dimensions of history education and rather stated that engaging students in 'affective practices' (e.g. experiencing emotions, activating students' senses) and cognitive learning strengthened each other during a museum visit. In line with that, Wojdon (2018) concluded that experienced history teachers in first place attached importance to both cognitive knowledge acquisition and the attractiveness of museum learning facilitating students' senses and emotions. Other studies have supported this combined importance for experienced teachers (Escribano-Miralles et al., 2021b; Ferrer-Fons & Rovira-Martínez, 2021; González-Vázquez et al., 2021; Stolare et al., 2021).

Marcus et al. (2012) found that, focusing on cognitive learning, a large sample of American history teachers believed that it was more important to stimulate disciplinary thinking than to pursue knowledge acquisition. Confronting this with their actual practices revealed a more complex image: teachers did not often interrogate the authority of the museum themselves and as a result also did not ask students to deconstruct historical representations. In contrast, according to Schep et al. (2018), Dutch art and history museum guides attached importance to cognitive disciplinary practices such as contextualization and asking questions about representations. Museum guides believed that 'contextualizing objects' and 'using objects for critical analysis' were important and required competencies. These would enable students to approach objects as historical sources and a museum as an institution telling a story supported by these objects. Also in contrast, PSTs did not really consider cognitive learning regarding their beliefs on history museum instruction, but rather focused on the affective value of museum visits (Hubbard & Odebiyi, 2021).

### *Category 2. Instructional methods: between student- and teacher-centred*

A second category of research outcomes resulting from the analysis of studies' research outcomes concerns the instructional methods that have been used in a history museum context. Empirical analyses of designed and enacted instructional practices revealed a complex image with the often combined presence of student- and teacher centred instructional methods. Gomez-Hurtado et al. (2020) for example concluded that the educational resources of four Italian history museums were more inclined towards student-centred, hands-on and experiential activities such as workshops, cooperative work or corner-work. They also stated that passive, 'traditional' activities and resources such as guided tours (i.e. teacher-centred) were used frequently, be it in a more interactive way, complemented with more student-centred activities and learner-instructor interaction. Zarmati (2020) also observed this combination. While observing museum educators during instruction in Australian history museums, she most frequently observed combinations of explicit instruction and dialogic interaction between instructor and learner. Museum educators played central roles, but actively involved students as well through methods such as guided questioning, immersive sensory experiences, role plays or dress-ups. Other studies also observed combinations, most frequently socratic questioning methods and (sometimes informal) bidirectional interactions between learner and instructor (Ferrer-Fons & Rovira-Martínez, 2021; Spalding, 2011; Trofanenko, 2006, 2014; Uppin & Timoštšuk 2019; Wallace-Casey, 2016). Tigert et al. (2021) added to this observation that the occurrence of learner-instructor interaction and learners' active participation in the instructional discourse was rather triggered if the instructor mainly used open questions, possibly preceded by closed questions as a 'lead-in' activity.

Some descriptive studies promoted the benefits they saw in hands-on, student-centred approaches enabling students to attribute meaning to the museum learning process on their own.

Rooted in the logic of a constructivist learning paradigm, this allowed students “to grapple with content in their own ways, knowing that they can ask questions or discuss further if they choose to” (Leftwich & McAllen, 2018, p. 397; Brand, 2013). Empirical analyses of instructional practices rather pointed towards the positive effects of combining student- and teacher-centred approaches. They have for instance shown that this allowed for a better inclusion of students with different emotional and cognitive capacities, and also allowed to facilitate affective-emotional reactions in a much more direct way (Gomez-Hurtado et al., 2021; González-Vázquez et al., 2021). Ferrer-Fons and Rovira-Martínez (2021) found that learner-instructor interactions triggered students’ historical empathy and their identification with lived historical experiences, in this case regarding the Spanish civil war. Uppin and Timoštšuk (2019) similarly concluded that the museum educators’ role during an historical empathy activity was crucial in letting students effectively connect their affective-emotional reactions with a cognitive understanding of multiple historical perspectives. Spalding (2011) found that giving voice to students’ own assumptions and prejudices (in this case about ‘African history’), provided an opportunity into challenging these assumptions, through concrete questions asked by the instructor that built upon students’ answers. Descriptive studies align with this empirical finding, describing how designed instructional practices centre around challenging so-called ‘entrance narratives’, upon which learner-instructor interaction can be built in order to build deeper historical understanding (Davis & Goldberg, 2019; Grim et al., 2017; Munn & Wickens, 2018). These examples show how learner-instructor dynamics can also meet the challenges related to historical empathy addressed earlier, regarding the necessary balance between cognitive and affective goals.

Regarding their own beliefs on instructional methods, the reviewed studies’ outcomes revealed that various instructional agents take different positions. Analysis of PSTs’ beliefs revealed that they mostly associated museum visits with teacher-centred methods such as guided tours and as a result also preferred these themselves. Two reasons for that were observed. First, they stated to lack specific knowledge of and tools for developing instructional practices themselves, resulting from a general lack of training in museum education (Felices-De la Fuente et al., 2021; Görmez, 2020; Uslu, 2020). Resulting from this, PSTs self-assessed their capacities to provide instruction in a museum much lower than their willingness or motivation to visit museums with students (Hubbard & Odebiyi, 2021). Second, PSTs’ experiences during their own time as students, being mostly exposed to guided tours when visiting museums, played a considerable role (Felices-De la Fuente et al., 2021). Also, they stated that they found this instructional method less time consuming and less sophisticated (Uslu, 2020). In contrast, experienced history teachers seemed to recognize the importance of adding active and hands-on approaches to provide effective instruction, particularly in facilitating students’ cognitive and affective learning (Harker & Badger, 2015; Uppin & Timoštšuk, 2019). Schep et al. (2018) found that museum guides in their research did not seem to give much thought to instructional methods: they indicated not giving much thought to the incorporation of learning theories into their practices, as they considered educators responsible for writing tour programs and not themselves.

### *Category 3. Collaboration between schools and museums before, during and after instruction: between opportunities and challenges*

The third category concerns the finding studies formulated regarding the relationship between schools and museums in preparing, enacting and processing instructional practices. Scholars have agreed upon the opportunities that collaboration entails, both regarding the content and the design of instructional practices. Concerning contents, empirical studies have shown how instructional practices during a museum visit contributed to exposure to a wider range of historical narratives than usually taught in classrooms. Keenan (2019) for example studied how an Indigenous museum educator brought students into contact with a ‘counterstory’. While often ignored in textbook narratives, this counterstory included the subaltern perspectives of Californian Indians upon American history. He concluded that ‘going out of school’ was the most powerful act for students (p. 69). Other studies supported this powerful character, certainly regarding students’ ability to engage with the perspective of ‘the other’, thus engaging in a

widening of their perspectives upon the past, for instance regarding the slave trade (Spalding, 2011), the histories of conflicting communities in Northern Ireland (McCully et al., 2021) or adding local perspectives to the national narrative mostly present in textbooks (Stolare et al., 2021).

Concerning the didactical design principles behind history museum instructional practices, descriptive studies have pointed towards the necessity of collaboration and efficient communication between both institutions, particularly through bringing teachers and museum educators in contact with each other before the actual visit. They describe two ways to do so. First, collaboration can work if classroom teachers inform the museum educator about the way they teach history in schools. This enables (1) the connection of the museum experience to lessons before as well as after the visit and (2) the museum educator to complement the school curriculum with hands-on object-centred approaches where museums are often more familiar with (Harrison-Buck & Clarke-Vivier, 2020; Moisan, 2015; Paulsen, 2019). Second, within instructional practices themselves, the museum educator and the classroom teacher need to assign each other clear roles. Paulsen (2019) for example proposes to consider the teacher as a 'professional facilitator' of the learning process who connects museum experiences, more directly led by an educator, with classroom learning experiences.

Empirical analyses of collaborative processes leading towards the design and enactment of instructional practices revealed that these had a positive impact on students' learning about history. Uppin and Timoštšuk (2019) concluded that the key element for fostering historical empathy in a museum was to engage in meaningful collaboration with teachers, as they dealt with the concept in their lessons as well, and as this had a significant impact upon students' learning outcomes. Meeus et al. (2021) concluded that the co-creative process of a lessons series (by PSTs and museum educators, all being 'heritage mediators') was a critical success factor. All agents brought their own teaching background into the process, which led to experimenting with multiple perspectives, the adherence to emotional registers and the engagement with how to address ethnocultural diversity. The success was empirically confirmed through the fact that the lesson series significantly appealed to students with a more diverse ethno-cultural background than to those born in the country of research (Belgium).

These specific examples illustrate that collaborative approaches between schools and museums and their respective instructional agents are necessary as well as effective. Larger scale empirical studies have shown that the beliefs of various instructional agents supported this, but that their actual practices revealed a more complex image. Experienced teachers' and educators' views were for instance found to be similar in this way that they agreed (1) on the actual importance of fruitful collaboration and communication (Marcus et al., 2012; Noel & Colopy, 2006; Wright-Maley et al., 2013) and (2) on the fact that the educator should be the one most responsible for connecting the museum visit with the interests of the school group (Escribano-Miralles et al., 2021b). Nevertheless, both agents indicated that there was significant room for improvement. Moreover, empirical studies showed that, in practice, both sides sometimes showed little will or no concrete plans to overcome issues (Escribano-Miralles et al., 2021b; Marcus et al., 2012; Noel & Colopy, 2006; Wright-Maley et al., 2013). The use of instructional resources and materials provides an example. Teachers often expected these materials to be offered to them by museum educators before their visit, which resulted in the fact that they saw themselves as a consumer and the museum (educator) as a product provider (Noel & Colopy, 2006; Wojdon, 2014). Dialogue between the two institutions, if existing, did not seem to enable discussion about for example goals, students' prior knowledge or their learning needs (Wright-Maley et al., 2013). Besides, analysis of self-reported practices revealed that mostly only teachers considered how classroom and museum education could be connected, and only they were engaged in designing pre- and post-visit activities (Escribano-Miralles et al. 2021a; Zarmati 2020). These empirical findings contrast with the ideal scenarios of the cases above, but point towards the challenges that accompany the many opportunities that collaborative approaches entail.

## Conclusion and discussion

This study aimed to review scholarly literature that addressed instruction in a history museum context towards an audience of primary and/or secondary school students. The 45 selected studies were analysed to understand (1) how they designed research on instruction, in terms of research questions, participants involved and theoretical and methodological approaches, and (2) what the research outcomes of these studies revealed about the content, the nature and the approach of instruction.

Before discussing the main results, it is important to point at the limitations of this study. Regarding the selection process, we explicitly aimed at looking for peer-reviewed journal articles, in English, in particular. This means that for instance book chapters and non-peer-reviewed articles, that might possibly also offer interesting insights, have not been included in our analysis; research from the non-Anglophone scholarly world, at least when not published in English, has not been included either. In terms of focus, we deliberately limited ourselves to the context of history (museums and education), not including research designs or research outcomes on instructional processes in other types of museums. Nevertheless, a recent overview of literature on informal learning in museums in general (Pierroux et al., 2022) resonates many of the conclusions drawn within this literature review, in particular with regard to the (student- and teacher-centred) instructional methods and the collaboration between schools and museums. A last limitation is that we focused the analysis on instruction, and the (underexplored) perspective of instructional agents. While isolating instructional perspectives proved to be useful in identifying major challenges and tensions, it remains clear that instruction cannot be fully understood apart from learners' perspectives, as the reviewed studies also clearly indicate. Therefore, it is appropriate to further consider the results from this review study in combination with studies entirely focusing on students' learning.

The significant increase in the past five years of research addressing instruction in history museums might indicate that a new subfield is emerging. Within this subfield, certainly museums dealing with sensitive, difficult histories such as colonial histories or histories of war and slavery have gained attention. Addressing these themes allows instructional agents to stimulate students' awareness of multiple historical perspectives in combination with their affective engagement. This parallels a growing attention for these themes in history education research in classrooms (Goldberg & Savenije, 2018).

However, the variety between the 45 reviewed studies regarding their research designs might at the same time offer an indication that such subfield is not yet established quite strongly. This variety provides a major challenge in building an adequate, generalizable view on effective instructional practices. The claims that various studies made were sometimes difficult to compare, due to the fact that not many studies had similar focuses. When considered globally, the studies focused upon different combinations of agents, different aspects of instruction and performed their research in various (national and museum) contexts with different finalities. Some studies, particularly in the first category we distinguished when analysing the research design focuses, concerned majorly descriptive, non-analytic studies. The other three categories we distinguished included empirical analyses of instructional processes, albeit from different methodological and theoretical perspectives. Methodologically, the reviewed studies ranged from large-scale quantitative studies to small(er) scale qualitative studies using data collection methods such as questionnaires, interviews, performance tasks or interviews. Theoretically, both discipline-specific and more general pedagogical frameworks were used, but not often combined. The relationship between instructional practices and students' learning has for example been extensively studied from a disciplinary point of view, while PSTs' beliefs predominantly from a general pedagogical point of view. Studies that predominantly used discipline-specific frameworks mostly started from the literature on historical thinking concepts, and almost not from related concepts. This might be explained through the mainly Anglo-Saxon background of the studies, while a concept such as historical consciousness is mainly influential in Germany or Scandinavia.

Taken together, these findings regarding the research design of the reviewed studies provide pathways for both future practices and research. The descriptive studies for instance, while in essence not being driven by concrete research questions or methodological approaches, often provided concrete examples and case-studies of good instructional practices. For future research, a lot of unexplored territory remains, e.g. in carefully contrasting a wide range of instructional agents' (for example epistemological, didactical or more personal) beliefs with their instructional practices, both in terms of designing instructional resources or of physically enacting instruction. Additionally, through incorporating PSTs into research designs which already integrate experienced teachers or museum educators, expert-novice research could be conducted, exposing differences and similarities through contrasting beliefs and practices of these three different groups of instructional agents. Regarding theoretical frameworks, a thorough use of the concept of pedagogical content knowledge (PCK) could for example provide a pathway to more extensively map instructional agents' pedagogical and historical content knowledge (e.g. Tuithof, et al., 2019). Combining the framework of 'object-based learning', frequently used in higher education literature in various domains such as anthropology and science teaching from both cognitive and affective viewpoints (e.g. Adams et al., 2008; Adams, 2015; Schultz, 2018), with disciplinary insights about reasoning with and about historical sources and historical empathy would also be a fruitful way forward. Historical objects in museums, for instance through interrogating their provenance or their (emotional) significance in past and present, are particularly suited to mediate students' historical learning (Bain & Ellebogen, 2002).

Despite the great variety in research designs, we were able to identify, based on the analysis of their research outcomes, three categories that identify key debates in the research on history museum instruction. Regarding instructional goals, outcomes revealed that both cognitive and affective aspects of historical thinking have found their way into history museum instructional practices. At the same time, they indicated that, when effectively aiming to engage students in disciplinary thinking, a balance between cognition and affect is challenging to find. Studies for instance concluded that instructional agents' own skills and knowledge were crucial to draw bridges between past and present that connect both cognitive and affective learning processes. Instructional goals that rather focused on the present (such as on present-day norms, values or ethical judgments, human rights, critical citizenship or students' identification with cultural heritage), complicated this connection, as they often solely triggered emotional-affective learning. This does not mean that these processes have to be avoided. Findings have shown that students' emotional engagement can be successfully used as an entry point into deeper, critical engagement with multiple historical narratives. As Miles and Gibson (2023, p. 519) advocate for as well, it seems key for instruction to negotiate tensions between distance (the past as a foreign country) and proximity (the familiarity of the past) when connecting past and present in history education. Future research, both in classroom and museum contexts, could provide more profound insight into how citizenship and disciplinary approaches of history (museum) education precisely interact or co-exist.

Empirical analyses of instructional methods have rather unanimously pointed towards the positive effects of combining student- and teacher-centred methods in history museum instruction. Certainly regarding learner-instructor interactions, studies have emphasized how these created dynamics that often lead to profound engagement in disciplinary thinking, and also bridged cognitive and affective learning. As a result, the choice for this particular instructional method seems to influence the successful obtaining of goals regarding cognitive and affective dimensions of disciplinary thinking. In addition, while experienced teachers' beliefs about instructional methods aligned with the entanglement between teacher- and student-centred methods, PSTs rather associated museum instruction with teacher-centred methods. This was explained through their lack of experience with instructional practices, a lack of specific training on museum education and a reliance upon their own experiences as a student. For future research, these two findings reveal that analysing the alignment between goals for instruction and instructional methods, as well as also examining how PSTs design and enact instructional practices, would prove useful. For practitioners, as well as for teacher educators and facilitators



of professional development programs, it becomes clear that the training of instructional agents is necessary to make them familiar with both disciplinary and general pedagogical approaches towards history museum instructional practices.

A relationship that has been deeply examined is the one between schools and museums and their corresponding instructional agents. Small-scale case studies, as well as descriptions of existing instructional practices have largely described and analysed the opportunities of collaboration in both designing and enacting instructional practices, both regarding widening the scope of classroom historical narratives and didactical approaches. Through embedding the museum visit in the curriculum, through assigning clear roles to each instructional agent and through co-creating didactical activities, positive impacts on students' learning have been found. However, larger scale examinations revealed that on a more general level, several hurdles existed that hindered fruitful co-creation. Misconceptions about each other's expertise or opposing expectations seem to hinder fruitful collaboration. Deeper analysis of how collaboration or co-creation can be facilitated, taking into account both pedagogical as well as historical expertises of various instructional agents, would be an interesting way forward for research. In addition, practitioners and researchers who train instructional agents can seize opportunities in training programs to bring together educational agents from both schools and museums in professional learning communities (e.g. Prenger, Poortman & Handelzalts, 2019; Schep, 2019) in order to learn collaboratively from each other's knowledges, practices and approaches and to enable them to work in co-construction. Given that many studies have considered co-operation as a critical success factor, this will be without any doubt be beneficial for both future practices, as well as for being studied in empirical research.

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