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Interpreting for All Minds: Synthesising Practices for Cognitively Inclusive Heritage Interpretation

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Abstract:

The thesis discusses cognitively inclusive heritage interpretation and how it can increase learning and engagement at cultural heritage sites. Inclusive tourism aims to develop accessible opportunities for marginalised groups, while heritage interpretation seeks to create learning opportunities about heritage sites and their history. The aim of the thesis is to increase understanding of how cognitively inclusive practices in heritage interpretation can benefit a diverse range of visitors based on their educational backgrounds, learning preferences and difficulties, and cultural and language barriers. Given the importance of education at heritage sites, the purpose is to understand which practices enhance learning and engagement at heritage sites through interpretation.

The study was conducted by semi-structured interviews with interviewees of different educational backgrounds, languages, cultures, and learning preferences. The interview questions aimed to investigate the interviewees' perceptions, opinions, and experiences in heritage interpretation. Additionally, they evaluated different cognitively inclusive practices, which were synthesised on the basis of previous literature. Therefore, the research methodology was qualitative. The findings were analysed by content analysis.

The findings indicate that participants agreed on three main challenges in current heritage interpretation: barriers in comprehension, sustained attention, and engagement. Furthermore, participants with different educational backgrounds and learning preferences agreed that heritage interpretation could lower these barriers by providing a holistic structure throughout the heritage site and each narrative, using interpretive storytelling, offering different presentation methods, and making heritage sites more visitor-centred. Lastly, the research shows tendencies that cognitively inclusive practices are also beneficial for visitors with high educational backgrounds.

In conclusion, the research suggests that cognitively inclusive practices can make heritage interpretation more accessible and engaging for a wider audience. The practices were evaluated positively and seem engaging for a variety of visitors. It could be beneficial to focus on creating heritage interpretation for general visitors, rather than experts, including different presentation options, offering visitor-centred facilities, and enriching the content through value-adding and emotion-provoking experiences.

KEYWORDS: cognitive inclusivity, heritage interpretation, inclusive tourism, accessible learning, heritage storytelling, visitor experience

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1. INTRODUCTION TO INCLUSIVE HERITAGE INTERPRETATION

Heritage tourism is one of the oldest tourist activities, which can be seen in early pilgrimages to spiritual places, the Grand tour through Europe in the 16th to 18th century, and the seven wonders of the ancient world (Goodey, 2006, p. 12; Timothy, 2011, pp. 1-4). Until today, heritage sites are attracting endless numbers of tourists. Heritage sites are historically, culturally, or naturally significant places that are preserved from the past in the present to educate future generations (Timothy, 2011, pp. 3-5). They can be monuments, landscapes, and buildings representing collective memory and identity. One of the main aims of heritage tourism is to educate visitors about the heritage sites, their history, and their meaning to society (Veverka, 2018). Learning at heritage sites takes place through heritage interpretation. Heritage interpretation is a tool to explain information and the historical relations of heritage to visitors. It is essential to highlight that it is more than only presenting information, "but a specific communication strategy that is used to translate that information for people, from the technical language of the expert, to the everyday language of the visitor" (Veverka, 2018, p. 11).

One approach to reach a more significant number of visitors is to make heritage tourism more inclusive, as part of the inclusive tourism field. Inclusive tourism aims to offer just and beneficial tourism practices for all, including marginalised groups (Scheyvens & Biddulph, 2018). Marginalised groups are defined as groups or communities in society who face the risk of discrimination due to various personal characteristics, for example, ethnicity, belief, age, gender, sexual orientation, health conditions, disabilities, education level, socioeconomic status, and geographic origin (European Institute for Gender Equality, 2024). One of the key characteristics of inclusive tourism research is the idea that, despite focusing on including marginalised groups, it benefits the majority of society through inclusive practices (Scheyvens & Biddulph, 2018, p. 8). A typical example is ramps in addition to stairs, which are intended for wheelchair users; however, they are also beneficial for people with baby carriages, bikes, dogs, or suitcases. Visit Finland (n.d., p. 7) defines inclusive tourism as "non-discriminating and accessible travel where all customers can use the services and have experiences on an equal basis. Inclusive travel takes all target groups equally into account".

Inclusive heritage interpretation aims to create interpretation for a broader audience, including different cultures, beliefs, abilities, educational backgrounds, and interests (Domínguez, 2024, p. 23). Although there are inclusive heritage interpretation principles, many heritage sites face challenges. The most studied barriers are politically biased representation, diverse visitor preferences with language and cultural barriers, limited visitor engagement, low prioritisation of heritage tourism in budgeting, and an increase in usage of technological tools (Hems, 2006; Poria et al., 2009; Uzzell, 1996; Young, 2005).

This research focuses on cognitive inclusivity, which aims to lower the social barriers of diverse visitor preferences with language and cultural barriers and limited visitor engagement. There is still a more significant focus by heritage interpreters on highly educated individuals as audience groups, which neglects visitor preferences by persons with lower and different education or learning difficulties (Ablett & Dyer, 2010; Burton & Scott, 2007; Dawson, 2014). Every visitor has a different educational background shaped by various factors, such as genetics, socioeconomic status, academic education, interests, and culture (Fraillon et al., 2014). As heritage sites often display complex historical happenings, it can be challenging to comprehend the topic, especially for visitors with a lower educational background on this specific theme. Despite its focus on possible visitors with cognitive limitations, cognitively inclusive principles at heritage sites might support the learning and increase the engagement of all visitors, including those without limitations or with limitations that are not directly caused by learning difficulties. Cognitively inclusive principles include easy-to-read texts, visual interpretations, contextual framing, use of multiple senses, and visitor engagement (Chung, 2022; Timothy, 2011, pp. 244-249). Therefore, regarding inclusive tourism, heritage interpretation should be cognitively inclusive to all, meaning that every visitor can understand and process the displayed information and knowledge based on their educational background and preferences to learn.

1.1 Literature review about inclusive tourism and heritage interpretation

This chapter summarises previous research on inclusive and accessible tourism, and heritage interpretation.

Inclusive and accessible tourism

Inclusive tourism is a relatively new research field which has emerged from accessible tourism. Although accessible and inclusive tourism have been used as synonyms (Harju-Myllyaho, 2018, pp. 53-57), multiple studies are using the term accessible tourism as a movement, which includes tourism for differently abled tourists, while inclusive tourism includes all marginalised groups (Scheyvens & Biddulph, 2018, p. 7), for example, LGBTQIA+ tourists (Harju-Myllyaho, 2018) and pro-poor tourism (Winter et al., 2021). It shows clearly that most studies have been conducted on accessible tourism, focusing on disabled travellers. However, there is only limited research based on inclusive tourism. Another common term for inclusive tourism is tourism for all (Neumann & Kagermeier, 2017, p. 1).

The most essential research field seems to be the need and impact of inclusive tourism, focusing on the right to be included, the positive economic impact of including marginalised groups for tourism practitioners, and the benefit for others. Firstly, the possibility to access and participate in culture is considered as a human right (Gomez-Heras et al., 2023, p. 7115), which shows the importance of inclusive tourism and the movement to make it accessible to all (Deffner et al., 2015, p. 4), which includes designing and implementing tourism with "the values of independence, equity, and dignity" (Darcy & Dickson, 2009, pp. 21-22).

Secondly, there is a high number of research studies studying the positive impact of inclusive/accessible tourism on the economic benefits for tourism practitioners. The studies focus on the increasing number of affected people, who are marginalised, and on how if they could participate, they would increase the annual spendings in destinations despite the common perception that in example disabled travellers have not sufficient funds to travel due to their disability (Alén et al., 2012, pp. 160-161; Darcy et al., 2010, pp. 32-33; Dwyer & Darcy, 2011, p. 235; Luiza, 2010, pp. 1155-1156; Neumann & Kagermeier, 2017, p. 3). For example, Dwyer and Darcy (2011) presented in their research that there is a missed demand for travellers with disabilities, which would lead to potential growth if barriers were removed. Thirdly, researchers have demonstrated how inclusive tourism benefits not only marginalised groups but also the majority (Alén et al., 2012, pp. 160-161; Darcy & Dickson, 2009, p. 4).

On the other hand, the second wide research field is practices, such as making tourism more inclusive and accessible; however, given the immense range, the research here is somewhat limited. Additionally, most studies focus on physical accessibility for travellers with

disabilities. The main results show the importance of Universal Design and advanced infrastructure (Darcy et al., 2010, pp. 8-9; Zsarnoczky, 2017, p. 9). Furthermore, studies have demonstrated that information on accessibility and inclusivity is crucial for travellers to decide and plan their trip (Harju-Myllyaho, 2018, p. 69; Fernández-Villarán et al., 2021, pp. 113-114). Lastly, Zsarnoczky (2017, p. 9) highlights the need for sufficient training for staff on accessibility. Only few papers have emphasised on the further development, meaning that inclusive tourism not only focuses on physical accessibility, however more on developing strategies, reducing biases, and reducing mental barriers (Gondos & Wirth, 2020, p. 958; Neumann & Kagermeier, 2017, pp. 6-7; Yau et al., 2004).

Further research has been focused on participatory developments, meaning to include marginalised persons in the design process as well as marginalised people as tourism practitioners (Cerdan Chiscano & Darcy, 2021, pp. 14-15; Doan & Nguyen, 2023, p. 5; Harju-Myllyaho, 2018, p. 67; Michopoulou et al., 2015, p. 186; Neumann & Kagermeier, 2017, p. 2; Scheyvens & Biddulph, 2018, pp. 584-585). Most of the literature has used qualitative research methods, especially case studies, which analyse specific touristic destinations and attractions. Additionally, research that focuses on the visitor's point of view has been limited and would enhance the understanding of inclusive practices in tourism, which can be seen in Yau et al.'s (2004) study conducted through in-depth interviews and focus groups of travellers with disabilities.

Heritage interpretation

Heritage interpretation has existed as long as heritage tourism has; however, academic research about this field is relatively new. One of the main advances was made by Tilden in the 1950s. Moreover, research has also focused on inclusive practices for heritage interpretation; however, the focus was again on accessibility, rather than inclusion. The common results are that transportation to and at heritage sites and the heritage sites themselves need to be physically and sensorially accessible, for example, assistive technology and the use of multiple senses are tools to increase accessibility (Deffner et al., 2015; Doan & Nguyen, 2023, p. 4; Gomez-Heras et al., 2023, p. 7120; Harland et al., 2024, p. 139).

Deffner et al. (2015, p. 1) further developed inclusive heritage interpretation by defining three categories: possibility to move, possibility to understand, and possibility to familiarise with heritage and produce their own narrative. Multiple studies have also highlighted the

importance of visitor engagement for better learning results (Gomez-Heras et al., 2023, p. 7120). Additionally, Gomez-Heras et al. (2023, p. 7121) demonstrated the importance of not offering an alternative but integrating the different representations in the heritage site. They concluded that an increase in information and how it is represented also increases accessibility. On the other hand, it is essential to mention that studies have shown a lack of accessibility and inclusion at heritage sites and that the research here is limited. One of the key issues why heritage sites are not developing accessibility further is the emphasis on preservation (Garrod & Fyall, 2000, p. 702). Lwoga and Mapunda's (2017, p. 51) study's results suggest that heritage sites have difficulties serving travellers with disabilities due to a lack of funds and the fear of limited preservation and authenticity by adapting to their needs.

When looking at the cognitive inclusivity of heritage interpretation, several studies demonstrate that heritage sites, in these studies, museums, focus primarily on high-income and highly educated visitors (Ablett & Dyer, 2010; Burton & Scott, 2007; Dawson, 2014). The content and interpretation are therefore specifically tailored to this audience group. Despite a small customer group and declining interest in heritage sites, this also does not align with the principles of heritage interpretation or inclusive tourism. For example, Dawson (2014, p. 991) demonstrates that individuals with lower education are excluded from scientific museums due to language barriers and a lack of background information regarding scientific happenings. The participants could not understand the texts or play scientific computer games at the museum. The author concludes that "'inclusive' informal science learning is not simple but is a key issue for science education" (Dawson, 2014, pp. 991-1005). Falk (1999) highlights that museums are developing from institutions for elites to places for a broader audience and casual learning. Lastly, Ablett & Dyer (2010, pp. 18-20) argue that today's heritage interpretation focuses too much on information presentation rather than educating visitors individually and engaging them to enjoy the knowledge, which reflects the principles stated by Tilden.

In summary, research on cognitively inclusive heritage interpretation is limited, as previous literature has mainly focused on physical accessibility. Cognitive inclusivity appears to be a relatively new research field, with only a few studies exploring how heritage interpretation can be made understandable for all visitors. Moreover, many studies emphasise the benefits for tourism practitioners rather than the experiences of marginalised groups. Lastly, most studies have been conducted through case studies, limiting the variability of research

methodologies. This study aims to narrow down this gap by exploring cognitive inclusivity from the perspective of marginalised visitors themselves, contributing to a more inclusive and visitor-centred understanding of heritage interpretation.

1.2 Purpose of the study and theoretical framework

The aim of the study is to increase the understanding of how cognitively inclusive heritage interpretation can benefit a diverse range of visitors. This range can include:

- different educational backgrounds: formal education, informal education, interest in history and culture, experiences in travelling and visiting heritage sites
- learning preferences: use of different senses and methods
- learning difficulties: for example, dyslexia, ADHD, and ASC
- different cultural educational backgrounds
- language barriers

The concept of cognitive inclusivity refers to the idea of presenting information and knowledge as understandable as possible for people with different learning preferences and learning difficulties (Chung, 2022; Neil, 2023, p. 23). Learning difficulties are, for example, dyslexia, challenges with reading and writing, or attention deficit hyperactivity disorder (ADHD), challenges with concentrating on one specific topic for a longer time. It is also beneficial for individuals who are still learning the language, such as children and immigrants. Moreover, it is helpful for people with a lower educational background, who might face challenges understanding complex sentence structures and technical terms (Chung, 2022; Neil, 2023, p. 23).

While easy-to-read texts, pictures, and figures are proven to support the learning and understanding of information for persons with learning difficulties (Chung, 2022; Neil, 2023, p. 23), I want to study how cognitive inclusivity might benefit all different kinds of visitors. This could help to understand the importance of cognitive inclusivity at heritage sites. Benefit refers in this context to increasing the level of understanding and remembering of information. However, it also refers to increasing engagement at heritage sites. According to Hagenauer and Hascher (2014, pp. 20-30), learning outcomes increase when students enjoy the learning process. As previously discussed, one of the main aims of heritage interpretation is learning; therefore, it is important to understand how it can be made more cognitively

inclusive to a broader audience. This could also have potential future benefits for heritage sites. If visitors understand through learning the importance of preservation and visiting heritage sites, they might increase the number of visits they make to them. Similarly, engaging with heritage sites can have the same effect. Lastly, it could also increase the motivation in visitors to preserve heritage. Therefore, the main research question is:

> **RQ1**: How do cognitively inclusive approaches in heritage interpretation benefit various visitors with differences in educational backgrounds and learning preferences?

The following sub-questions are added:

> **RQ2**: Why are individuals facing issues of understanding and comprehending information at heritage sites?
> **RQ3:** Which heritage interpretation principles are the most appropriate for making heritage interpretation more cognitively inclusive?
> **RQ4**: How can cognitively inclusive heritage interpretation be made interesting enough for visitors with a higher educational background, especially in history?

RQ2 aims to support RQ1 by pinpointing the challenges that visitors have faced. With RQ3, I want to investigate which of the existing principles and practices work most efficiently. As there are practices that support cognitive inclusivity, it is important to understand which benefits the most visitors. Lastly, with RQ4, I want to understand if cognitively inclusive practices could limit visitors who are highly educated and/or have a special interest in history and culture. For example, a simplified text might not serve them, as the knowledge is already known.

The theoretical framework consists of three different theories that are used to define cognitively inclusive practices and principles for heritage interpretation. These practices and principles are then evaluated by the interviewees to understand how cognitive inclusivity can support learning and engagement at heritage sites. The theories are cognitive load theory for understanding the importance of reducing the amount of information, the schema theory to understand the importance of giving context to new information, and the concept of

Universal Design for Learning to define inclusive practices for diverse learning preferences and how to increase enjoyment and engagement. As one of the main aims of heritage tourism is to increase education about the past for future generations, it is important to make this information accessible to a broader audience. Therefore, it is important to understand how humans learn and process information. Figure 1 shows the theoretical framework in a visual format.

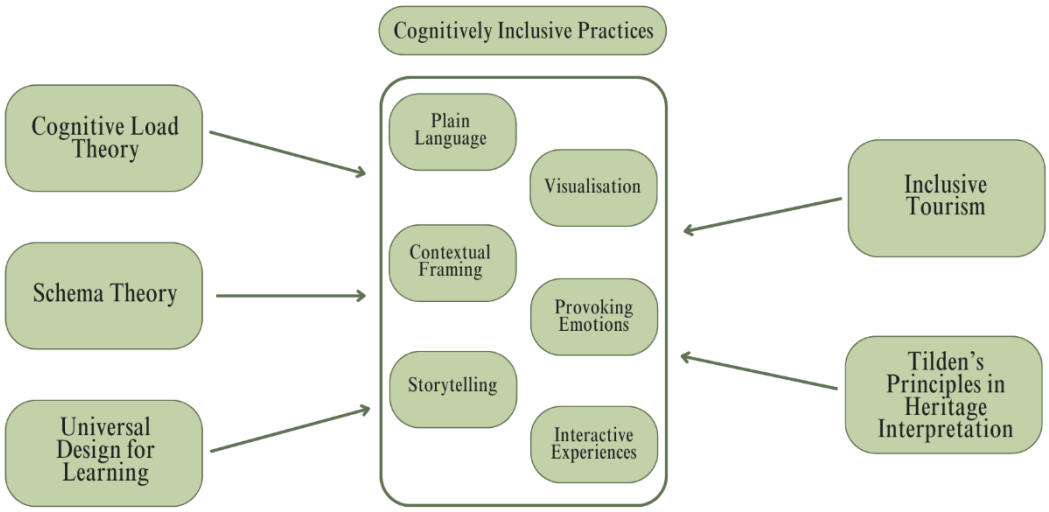

Figure 1. Theoretical framework.

The cognitive load theory demonstrates that every learning process requires cognitive work from human memory, which has only limited capacities (Likourezos, 2021; Sweller, 2011, pp. 42-57). The amount of cognitive load depends on the processed information itself and how it is delivered. In case of too high cognitive load, called cognitive overload, the memory cannot process information, and it has negative effects on the learning results (Likourezos, 2021; Sweller, 2011, pp. 42-57). This results in the idea that heritage sites should consider how much and in what ways information is displayed for visitors in order for them to learn more about the specific heritage site and its history.

The schema theory explains how people structure and interpret new information (Hedge, 2022; Meylani, 2024). A schema refers to a cognitive "framework" that helps categorise and store information in our memory. The theory suggests that humans always try to understand new information by categorising it into our existing schemas and frameworks. These

schemas help people to understand information faster, since schemas serve as shortcuts for processing information. However, schemas are dynamic and can change based on new knowledge (Hedge, 2022; Meylani, 2024). Regarding heritage interpretation, this means that information presented at a heritage site needs to serve existing schemas of visitors. This could be achieved, for example, by providing enough historical context, which is commonly known, for visitors to grasp the information quickly.

Universal Design for Learning (UDL) is used as a concept to understand how the chosen information and knowledge can be presented to a diverse audience (Galkiené & Monkevičiené, 2021, pp. 5-12). UDL is a method to create new curricula to serve all students, including students with learning challenges. Additionally, the concept highlights the importance of information processing and building a deeper understanding of content (Galkiené & Monkevičiené, 2021, pp. 5-12). In heritage interpretation, UDL could help to serve more versatile learning preferences due to presenting information in different formats.

The research follows the critical theory paradigm, which aims to give a voice to minority groups who are oppressed and seeks a change in society by doing research (Jennings, 2010, pp. 43-45). As this research also includes marginalised groups, the topic challenges current power dynamics and tries to give the oppressed a voice by doing the research from the visitors' point of view. Furthermore, the study is based on qualitative data collection, in particular semi-structured interviews, which are the common data collection method in critical theory approaches (Jennings, 2010, pp. 43-45).

1.3 Methodology and data collection process

As this research focuses on experiences, perspectives, and opinions of possible visitors to heritage sites, a qualitative methodology was chosen. According to Goodson and Phillimore (2002, p. 5), qualitative methods enable a deeper understanding of and insight into persons' perceptions and evaluations. I chose semi-structured interviews as a data collection method, as they enabled a direct discussion with interview participants. Semi-structured interviews offer a way to discuss feelings, ideas, and opinions deeply with persons who are directly affected by the researched topic (Goodson & Phillimore, 2002, p. 5). In this case, I want to highlight the experiences and ideas of visitors, who might be neglected in heritage interpretation. Additionally, semi-structured interviews combine structure and flexibility due to their

prepared set of questions, which can be adapted during the interview (Smith, 2010, p. 109). This combination increases the reliability and benefits the data analysis process (Smith, 2010, p. 109). The data collection consisted of seven interviews, during which we discussed the interviewees' general experiences and opinions on heritage interpretation, as well as the evaluation of different principles on cognitive inclusivity. The interviewees were persons from different educational backgrounds, different cultural backgrounds, with and without learning difficulties, and with different learning preferences. The analysis process was based on content analysis.

1.4 Structure of the thesis

The thesis consists of seven chapters. Chapter 1 serves as an introduction to the topic with a literature review, a summary of the theoretical framework, and a summary of the chosen methodology. Chapter 2 delves into the research phenomena of inclusive tourism and heritage interpretation, which serve as a foundation for this study. In Chapter 3, I introduce the learning theories of cognitive load and schema and the concept of Universal Design for Learning. These are the foundation of understanding the human learning process and cognitive inclusivity. The chapter concludes with six cognitively inclusive practices in heritage interpretation based on the ideas of inclusive tourism, heritage interpretation, and the three learning theories. In Chapter 4, I explain the methodology, data collection and data analysis process, and the findings of the conducted interviews are presented in Chapter 5. In Chapter 6, I interpret the findings in dialogue with the theoretical framework. Finally, Chapter 7 includes possible conclusions and implications for heritage sites. A list of references and appendices with the interview catalogue can be found at the end.

2. INCLUSIVE HERITAGE INTERPRETATION

This chapter introduces the research phenomena of inclusive tourism and heritage interpretation.

2.1 Inclusive tourism

The following sub-chapters include a detailed description of the concept of inclusive tourism, its importance and benefits, a more detailed explanation of cognitive inclusivity, and lastly, short definitions of different learning difficulties and possible challenges in learning.

2.1.1 Definition and dimension

The tourism industry is one of the fastest-growing sectors worldwide and in many regions faster than the economic growth in general (Statista Research Department, 2024); however, it is still a luxury product and, in many ways, exclusive (Scheyvens & Biddulph, 2021, p. 11). The tourism industry benefits only a particular group of society, and marginalised groups do not have the same opportunities to participate in tourism due to existing social barriers and processes based on prejudices and privileges (Jernsand et al., 2023, p. 826). Inclusive tourism has been an emerging trend in tourism research as well as its implementation within destinations and tourism practitioners. Although accessible tourism and inclusive tourism are used as synonyms in many fields, many researchers differentiate them as well, which is why this thesis will also use these terms separately, because accessible tourism often highlights just the inclusion of differently abled travellers. For example, the United Nations (2009, p. 9) defines it as creating products and services for consumers with disabilities, including seniors and families with small children, by removing barriers in transportation, information and communication, and facilities. Accessible tourism is based on the concept of Universal Design, which aims to make environments, communication, and products easier to access and use for everybody (Papamichail, 2012, pp. 242-243).

Inclusive tourism has been defined by Scheyvens and Biddulph (2021, p. 10) as “transformative tourism in which marginalised groups are engaged in ethical production or consumption of tourism and the sharing of its benefits”. There are two main ideas by Scheyvens and Biddulph (2021) that impact inclusive tourism: the sharing of benefits and the combination of production and consumption. Firstly, the researchers highlight that benefits gained

through touristic activities should not only stay with global players but also be shared with smaller, community-based organisations as well as in the Global South rather than the Global North (Scheyvens & Biddulph, 2021). Secondly, many tourism movements, which might look similar at first sight, focus only on fairer consumption of tourism, but not on fairer production. For example, social tourism wants marginalised groups to have the same possibilities to travel and neglects thoughts on how marginalised groups could produce tourism (Scheyvens & Biddulph, 2021, p. 14). This shows that inclusive tourism is a broad concept, which tries to take as many aspects into account as possible (Scheyvens & Biddulph, 2021, p. 23). This is also one of its biggest criticisms. It might be too big and impossible to realise. It seems utopic; however, it serves more as a framework of ideas to take steps to improve the tourism industry gradually (Scheyvens & Biddulph, 2021, p. 23).

They were also the first to establish the seven dimensions of inclusive tourism, which have been the foundation of future research on this topic (Scheyvens & Biddulph, 2018, pp. 16-21). In summary, inclusive tourism aims to increase the representation of marginalised groups, change the power dynamics towards marginalised groups, and share the benefits of tourist activities more evenly. These aims are important aspects of social inclusion, which also states that disadvantages and challenges for marginalised groups are not their fault; however, the fault lies in how our society is constructed (Scheyvens & Biddulph, 2018, pp. 16-21). However, as previously mentioned, inclusive tourism could also bring relatively high economic benefits to the tourism industry (Darcy et al., 2010, pp. 32-33; Neumann & Kagermeier, 2017, p. 3). This can be explained by the widening of the tourists' range and more customised offers to them. This could be a great starting point for making destinations and attractions more inclusive (Darcy et al., 2010, pp. 32-33; Neumann & Kagermeier, 2017, p. 3).

One important aspect I want to highlight is that social inclusion and inclusive tourism can benefit society. Although it focuses on marginalised groups, the developments can also have positive impacts on the majority of society. For example, accessible buildings are designed for people with impairments. However, they can also be helpful and more accessible for persons of different heights, seniors, pregnant women, families with small children, persons with temporary impairments (e.g. broken leg), people with chronic diseases, people with suitcases or equipment, and tired or stressed persons. This list demonstrates clearly that almost anybody can be affected by a (temporary) "limitation" and might appreciate, for

example, more space, a calmer environment, no stairs, places to rest, and support through staff (Papamichail, 2012, p. 244).

2.1.2 Cognitive inclusivity

The term cognitive inclusivity does not have an official definition or description; however, in this thesis, it is used as a term to describe the possibility for all persons, including those with different educational backgrounds and learning difficulties, to access and learn new information and knowledge. The more well-known term is cognitive accessibility, which describes the accessibility to online content for persons with cognitive impairments (Edler, 2015, p. 74). Cognitive accessibility's ideas are based on the guidelines of web accessibility (Zahra, 2024). Web accessibility aims to make online content accessible to users with impairments or limitations. It includes, for example, providing "definitions for any unusual words, phrases, idioms, and abbreviations" and using "the clearest and simplest language possible, or providing simplified versions" (Zahra, 2024). Cognitive inclusivity in heritage interpretation can include very different and versatile practices, which are explained in detail in Chapter 3.4.

Cognitive inclusivity at heritage sites can have multiple benefits for their visitors, the heritage site itself, and society in general. Firstly, cognitively inclusive practices can lead to a bigger learning outcome and more engagement at a heritage site, which influences the visitor experience positively. Kirchberg and Tröndle (2012, pp. 13-14) concluded in their research that post-visit satisfaction is influenced by emotional or cognitive outcomes. If a heritage site is more engaging to learn, visitors might have a better visitor experience (Kirchberg & Tröndle, 2012, pp. 13-14). Secondly, these practices can have a direct economic benefit for heritage sites due to a larger customer target group. As previously shown in Chapter 1.2, accessible/inclusive tourism attracts customer groups, who have been previously neglected by tourism practitioners, and who have a high potential on more spendings if tourism products are targeted directly at them (Darcy et al., 2010, pp. 32-33; Dwyer & Darcy, 2011, p. 235). Since heritage sites are still mainly targeting highly educated customers, there is also potential to attract other customer groups with lower or different educational backgrounds (Ablett & Dyer, 2010; Burton & Scott, 2007; Dawson, 2014). Besides the possibility of more visitors, heritage sites might also have the opportunity to educate about the need for and

importance of preservation, which is one of the main aims of heritage tourism, which could lead to more visitors to heritage sites in general.

Thirdly, a more accessible opportunity to learning has multiple benefits for society. The United Nations (n.d.) has stated that every child must have equal opportunities to access school education (Schuppner et al., 2014, p. 11). These equal opportunities refer to the concept of inclusion, meaning that students with limitations and learning difficulties are treated fairly and supported so that they can participate in education (Schuppner et al., 2014, p. 11). United Nations' statement can also be used to explain why equal access to informal education at heritage sites is important. Some might say that heritage sites have a social responsibility towards educating people, and this education needs to be accessible to all. Knowledge and understanding of history help humans to follow current trends and understand how and why societies and politics are shaped (Stearns, 1998). Most of the knowledge which we use today is based on historical data and its advances. Additionally, it creates a feeling of identity and contributes to our moral and ethical guidelines. Learning about other cultures and countries' history can enhance our cultural understanding and increase personal inspiration. Lastly, it can help to understand the world's complexity and diversity (Stearns, 1998).

2.1.3 Inclusive audiences

This sub-chapter briefly describes different visitor groups who might benefit from cognitive inclusivity in heritage interpretation. Firstly, there are people with intellectual disabilities and learning difficulties. Although some use these terms as synonyms, they are understood as different terms in this thesis. Intellectual disabilities (also: learning disabilities or intellectual impairments) are conditions that affect the intellectual and adaptive behaviour of persons (Darcy & Buhalis, 2011, p. 34; Mittler, 1995). This means that they can have, for example, a lower IQ, difficulties in literacy and expressing themselves, difficulties with understanding time, and lower social skills, for example, a lower feeling of guilt. The conditions usually appear before adulthood and can be caused by very different reasons, for example, alcohol consumption during pregnancy, Down syndrome, and meningitis in early childhood years. The condition can be mild, medium, or severe. Depending on the severity, people need different support systems, such as plain language, which can be found in cognitive inclusivity. However, if the condition is severe or profound, the person will usually need individual

support through their family and social services (Darcy & Buhalis, 2011, p. 34; Mittler, 1995).

On the other hand, learning difficulties are different conditions that require other methods for learning (McCain, 2022). One typical group of conditions is neurodivergence, which includes, for example, Dyscalculia, Dyslexia, Attention Deficit Hyperactivity Disorder (ADHD), Tourette Syndrome, Autism Spectrum Condition (ASC), and Dyspraxia. About ten to 20 per cent are considered neurodivergent worldwide. Regarding heritage interpretation and learning, Dyslexia, ADHD, and ASC seem specifically important to consider. Without adaptations, persons with these conditions might have challenges reaching a similar learning outcome as persons without them, not because they have less ability to learn, but because they need other conditions and environments (McCain, 2022).

People with dyslexia have difficulties in recognising words and spelling them (Blue, 2021; Temple, 1990, pp. 114-115). This can lead to problems in fluent reading and slower growth of vocabulary. Some people might develop due to the reduced reading, a lower understanding of complex topics, and background knowledge on specific topics. Support for them can be done through offering content in multiple senses, especially audio content. Furthermore, interacting with new knowledge and reviewing or recapping it regularly helps people with dyslexia (Blue, 2021; Temple, 1990, pp. 114-115). ADHD can cause learning difficulties due to an increase in inattention, hyperactivity, and impulsivity (WHO, 2019). Especially, the limited ability to focus can make traditional learning for persons with ADHD more difficult. Therefore, it is advisable to provide content with simple and specific language. Additionally, it helps to follow a particular structure or order when presenting information. Long texts can be reduced, for example, through pictures and figures. Lastly, it is important to provide space for movement (WHO, 2019). It is also important to highlight, that persons with specific physical disabilities, for example with visual or auditory impairments, might have learning difficulties due to the impairment, which can be compensated by cognitive inclusivity.

Another important impact on learning is the educational background, which depends on various influences, for example, formal and informal education, country of origin and cultural background, interest in particular topics and experiences in learning. These influences might have an effect on how much a person knows, for example, about history and culture, but also on how fast a person can learn new knowledge. A study conducted by Fraillon et al. (2014)

suggests that students' personal and home backgrounds impact their achievements in computer and information literacy. The results show that the most influential indicators are school education, parents' occupation, home literacy resources, and access to the internet. Kang and Yoon (2008) studied the differences in behaviour in learning to use a complicated electronic device, which showed that the educational background on this topic had the highest impact on success. Cook (2006) showed that prior knowledge of the learned topic has the highest influence on learning new knowledge through graphics.

Although school education does not lead to a higher educational level in general, it can be said that persons with higher school education might have a wider educational background, especially in fields of history and cultural understanding (Chau et al., 2023; De la Paz & Wissinger, 2015). Additionally, they might know more and better techniques for learning and understanding new knowledge. Schools in higher education often aim at scientific and academic knowledge, while those linked to lower school degrees aim at practical and applicable skills for specific occupations (Chau et al., 2023; De la Paz & Wissinger, 2015). Many heritage interpretations are designed for persons with an academic background, because they describe complex happenings or exhibits and use specified terminologies and complex sentence structures (Ablett & Dyer, 2010; Burton & Scott, 2007; Dawson, 2014). Therefore, it might be more challenging to interact with heritage interpretation as a person with a different educational background.

Another important aspect is the cultural background, which is influenced by where the person grew up. It can influence what a person knows about history and how history is interpreted (Awgichew & Ademe, 2022). For example, a European visitor has different knowledge about European history than a visitor who grew up in Asia. These influences shape how much visitors understand from heritage interpretation and how much they can and want to engage. Additionally, there is an approach in heritage interpretation research to include more global and diverse narratives (Ablett & Dyer, 2009). Sufficient context of the historical happening and important terms might help in these cases to make the information more accessible. Furthermore, different narratives from other cultures can be presented additionally, if applicable.

Lastly, the educational background is influenced by personal interest and experiences in specific topics. People with a high interest in history or a specific heritage site have advantages

in engaging with heritage interpretation (Timothy, 2011, pp. 15-20). Additionally, if a person visits a heritage site more often, they might understand faster what is presented and can understand the topics more easily. People might get used to terminology at heritage sites and understand new knowledge faster or more easily. Also, travelling experiences can positively influence learning and engagement at heritage sites due to increased knowledge of cultures (Timothy, 2011, pp. 15-20).

Another variation can be the knowledge of foreign languages. Many heritage sites already provide their interpretation in multiple languages; however, it is impossible to provide all languages so far (Timothy, 2011, p. 245). It might be possible in the future through translation programs and digital devices. Nevertheless, it is important for many visitors to have a sufficient level of English, as this language is usually provided at heritage sites (Timothy, 2011, p. 245). It is also more and more common to learn English in most countries; however, of course, the level can differ quite a lot. Most heritage interpretation in English is aimed at native English speakers (Dawson, 2014, pp. 991-1005). Therefore, if a person has a standard English level, for example, B1-level, they might have challenges in understanding historical terminologies and following the text fluently.

Besides learning capabilities, learning preferences and methods can also impact how much a person learns and engages at a heritage site. Although the idea of different learning styles is popular within society, there is relatively little scientific evidence for it (Hatami, 2012; Rohrer & Pashler, 2012). It is a controversial topic within science whether serving different learning styles has a high impact on learning outcomes. Different learning styles can be, for example, visual, auditory, kinaesthetic, or written content. Many see learning styles as bipolar trends, for example, visual versus auditory; however, as it is usually the case in science, they are part of a spectrum. This means that a person has preferences in visual content but can also learn with auditory content. Additionally, the preferences can change throughout time. (Hatami, 2012; Rohrer & Pashler, 2012). Therefore, I focus on learning preferences, meaning what people prefer to use to increase their enjoyment and possibly also the learning outcome. Many heritage interpretations are presented in a visual format, most of the time as a written text. Although this serves many customers, other tools that use other senses can support the learning process. Especially the use of interactive tools, such as games and quizzes, might increase the engagement of learners with different learning preferences.

Lastly, it is important to highlight the different visitor preferences and their needs. For example, children have different needs and expectations than seniors. Some visitors prefer to stay longer, while others prefer to make only a short visit. A more versatile and inclusive heritage interpretation might also serve the different needs and preferences of visitors. One important aspect that I want to highlight is that this thesis does not focus on children and families with children, although they might benefit from inclusive practices.

For this research, the educational background is vital in understanding the possible benefits of cognitively inclusive heritage interpretation for visitors. Therefore, the study focuses on formal education, prior knowledge, cultural background, learning difficulties, interest in history and foreign cultures, visiting frequencies to heritage sites and travelling, English language proficiency, and learning preferences.

2.2 Heritage Interpretation

This chapter is an introduction to heritage interpretation. Firstly, the term is defined, and its different purposes and aims are presented with the focus on education. Secondly, interpretive planning and Tilden's principles of heritage interpretation are explained. Lastly, the ideas and challenges of inclusive heritage interpretation are presented.

2.2.1 Different purposes and aims of heritage interpretation

Heritage interpretation is used as a communication and management tool (Tilden, 2007/1957; Timothy, 2011, p. 229). It includes different tools and practices to present knowledge about the heritage site and its related history to visitors. Tilden, who is known as the father of research on heritage interpretation, defined it as "an educational activity which aims to reveal meanings and relationships through the use of original objects, by firsthand experience, and by illustrative media, rather than simply to communicate factual information" (Tilden, 2007/1957, p. 17). Heritage interpretation has multiple purposes and aims, which can also differ from each heritage site. Its primary purposes are to preserve historical places, educate visitors, create enjoyable experiences, manage crowds, and raise revenue (Timothy, 2011, p. 229). Veverka (2018, p. 55) defines heritage interpretation's goals as a combination of delivering knowledge, provoking emotions, and influencing behaviours.

Many researchers have also highlighted the need for interpretation in cultural sites due to increased attachment towards heritage sites and reduced vandalism towards heritage (Nowacki, 2021, p. 20; Shalaginova, 2012, p. 117). Through raising awareness about the heritage site and its meaning, visitors can appreciate the site more, and therefore, accept and even support preservation of heritage sites (Gibb, 2006, p. 36; Tabraham, 2006, pp. 59-60). Binoy (2011, pp. 102-104) added that heritage interpretation needs to find a balance between educational and touristic goals, while Nowacki (2021, pp. 18-19) emphasised that interpretation should be educational, recreational, and inspirational. This list of different aims already shows one of the main challenges for heritage interpreters, as they must serve extremely diverse needs and expectations of visitors, local communities, and their own focus on historical preservation.

As this research focuses on cognitive inclusivity, it is crucial to understand the influence of learning and education of heritage sites on visitors. Cognitive inclusivity can enhance understanding and knowledge about different nations and cultures' traditions, lifestyles, and practices. This can lead to a better understanding of others and one's own cultures. Additionally, learning about history or historical events has many positive effects, such as the increase of understanding other people, societies, and current trends; the development of a moral and ethical compass, and the creation of an identity feeling (Stearns, 1988). Lastly, heritage interpretation can remind us about negative happenings in the past, which should not be forgotten in order to prevent them from happening again in the future (Timothy, 2011, pp. 194-195). Prominent examples are holocaust museums and slavery monuments.

Robertshaw (2006, p. 41) states that especially young people are not learning history at school, but through stories in books, movies and games; therefore, heritage interpretation must bring history to life. As the past no longer exists, heritage interpreters must reconstruct it (Copeland, 2006, pp. 84-88). As every visitor comes with their personal experiences and engages differently with the heritage sites, multiple different pasts can be constructed through heritage interpretation. A good learning experience means the visitor creates their opinion, asks questions, and evaluates the past (Copeland, 2006, pp. 84-88).

Although there are still numerous people travelling to destinations for learning about history and culture, there are also more and more people travelling solely for relaxation and ending up at heritage sites (Copeland, 2006, p. 91). Therefore, as an interpreter, it is important to

understand that not all visitors have an existing interest or enthusiasm for a heritage site (Copeland, 2006, p. 91). Light (1991) highlights that despite the motive regarding learning of visitors, most visitors learn new information during a heritage site visit. He argues that the level of learning outcome depends not only on the background knowledge and interest in learning about historical places and events, but also on how the heritage interpretation is designed regarding complexity, learning environment, and engagement (Light, 1991). Although interpreters have to consider many different aspects in heritage interpretation, the main idea is to preserve the past in the present for future generations.

Gibb (2006, p. 33) highlights the importance of visitor experience, meaning visitors enjoy their stay. The better the interpretation is, the better the visitor experience is (Gibb, 2006, p. 33). Hems (2006, p. 199) explains that this can be achieved through understanding the visitors' needs and expectations and especially through bringing real life into the remains of our past. Lastly, Gibb (2006, p. 39) highlights that regularly updating heritage interpretation is essential. Funding is often dedicated to new projects, but should also be directed to existing places and their improvements. It is important to test the ideas as much as possible and never forget the holistic approach of delivering a whole picture (Gibb, 2006, p. 39).

There are different channels and methods to present knowledge and information through heritage interpretation. Some of these are explained below. The most popular ones are signs or panels (Goodey, 2006, p. 17). These can show texts, graphics, figures, maps, pictures, and reconstruction drawings (Tabraham, 2006, pp. 72-74). Usually, a heritage site has an introduction panel with the site's historical background. The following panels can include specific information for certain areas or exhibits. An advantage here is the possibility of providing multiple languages. Those can also be differentiated through design elements like different fonts, font colours, or italic writing styles (Tabraham, 2006, pp. 72-74).

Another important and growing channel is live interpretation. Live interpretation can be guided tours, demonstrations, and acting. According to Robertshaw (2006, p. 52), live interpretation must include historical facts, an educational purpose, visitor engagement, and presentation skills. The live interpreter's enthusiasm and excitement for the heritage site can transfer to the visitors. However, it also becomes clear that this field of heritage interpretation needs both more academic research and more courage to test it and try out different versions (Robertshaw, 2006, pp. 52-53).

For a better learning experience, some heritage sites aim to integrate interactive and engaging elements that enhance the entertainment of visitors because enjoyable learning experiences can increase the learning outcomes and the willingness to visit more and/or more frequently heritage sites (Bath, 2006, p. 163; Timothy, 2011, pp. 234-235). The development is increasingly fast; however, typical tools are audio wands, audio tours, videos, tablets, and virtual reality (Bath, 2006, pp. 167-168). Audio options have many benefits for heritage sites and visitors (Bath, 2006, pp. 165-166; Tabraham, 2006, p. 75). It can be planned and used by the visitors personally, meaning they can choose what to listen to and therefore, focus on the information which they are especially interested in. Furthermore, it can be provided in multiple languages easily and audio options are also relatively affordable for smaller heritage sites, as, for example, they can be provided through mobile phones, which the vast majority of visitors has with them during their visits, and as no staff is needed to provide the tours or information (Bath, 2006; pp. 165-166; Tabraham, 2006, p. 75). Another popular tool is videos in different forms, such as on wands, screens, hand-held devices, or movie rooms (Bath, 2006, pp. 163-166). The videos often transfer the atmosphere better through music, voices, and moving pictures. If hand-held devices are used, these are often equipped with a GPS tracking system, leading to the possibility of managing crowds better. One important thought is that no tool is suitable for every visitor. Everybody has different skills and preferences (Bath, 2006, pp. 163-166).

2.2.2 Interpretive planning and heritage interpretation principles

Interpretive planning is the process of designing and implementing the heritage interpretation (Tabraham, 2006, pp. 56-69). As it is such a broad field, there are, of course, no strict guidelines that can be applied to every heritage site; however, certain practices and recommendations can be applied to most of them. As an interpreter, it is important to transfer the passion for heritage and the specific heritage site to the visitor. There needs to be the belief that the heritage sites hold something important for the future (Tabraham, 2006, pp. 56-69). Interpretation always represents something personal from the interpreter (Copeland, 2006, p. 85). Before starting, interpretation needs to be seen as something holistic, so main themes have to be established, which the interpretation should present (Copeland, 2006, p. 89; Hems, 2006, p. 199).

As previously mentioned, Tilden created philosophical guidelines for heritage interpretation, known as the six principles of heritage interpretation. According to Tilden (2007/1957), the six principles should not be taken as a guiding book, but more as practices that can be adapted to the purpose. For him, interpretation reveals the inspirational and spiritual meaning behind the facts; however, the foundation of any interpretation is always detailed research. It is important to understand the history, the relationships, and the development of the heritage sites thoroughly (Tilden, 2007/1957). Despite not using all details of this research in the end product, the deeper the research foundation is, the better the interpretation can be (Copeland, 2006, p. 90). It is also important to understand that Tilden did not limit the principles to the number six, as multiple could be added. For example, Craig (2007, p. 19) mentioned that if Tilden lived today, he would include a principle about environmental education. Tilden himself mentioned that the number six is not binding; if there were a binding number, it would be one: the love for education, heritage, research, and interpretation (Tilden, 2007/1957). Each of the principles is explained in detail below.

Principle 1: "Any interpretation that does not somehow relate what is being displayed or described to something within the personality or experience of the visitor will be sterile" (Tilden, 2007/1957, p. 34). This principle suggests that it is important to build a relationship between the heritage site and the visitor by catching their attention. Attention can be caught through triggering previous knowledge, experiences, or interests. Usually, heritage sites have the potential to create excitement, but an interpreter needs to create connecting points, in which the excitement can spark. Visitors always translate the interpretation into their own lives and what they can refer to in their own knowledge and experiences. Therefore, the translation needs to be as easy as possible. A practical example is to describe an event by "this has happened right where you are standing" (Tilden, 2007/1957, pp. 36-43).

Principle 2: "Information, as such, is not interpretation. Interpretation is revelation based upon information. But they are entirely different things. However, all interpretation includes information" (Tilden, 2007/1957, p. 34). Tilden highlighted that there needs to be a balance between factual information and interpretation, combined in a narrative. The told story should create and include feelings, make it lively and can be spiked with parables, pictures, and metaphors. It should tell the holistic picture of the background information (Tilden, 2007/1957, pp. 44-52). In another essay, Tilden discussed the usage of text in heritage interpretation. It has been the most common tool to present a story. According to Tilden, texts

should be reduced in certain situations. However, the most important thing is how the text is formulated. The language needs to be lively and engaging. Illustrations and figures can enhance the understanding. Furthermore, subtle use of humour can bring a story to life. Lastly, the visual design of text signs or booklets must be appealing and easy to read (Tilden, 2007/1957, pp. 89-100).

Principle 3: "Interpretation is an art, which combines many arts, whether the materials presented are scientific, historical, or architectural. Any art is in some degree teachable" (Tilden, 2007/1957, p. 35). This principle means that knowledge needs to be taught in an imaginary manner. Each individual interprets the whole world at any second, and therefore, the interpreter has the task of creating an imaginary story for visitors that is easy to follow. A consistent narrative through storytelling can bring this entertainment and engagement. Often, the interpretation is too scientific. The story is told from the perspective of the historian or researcher and not from the visitor, who is working in a factory, supermarket, or as a bus driver (Tilden, 2007/1957, pp. 53-58).

Principle 4: "The chief aim of interpretation is not instruction, but provocation" (Tilden, 2007/1957, p. 35). Provocation is meant as a form of stimulation and increases the visitors' understanding of the presented knowledge. Visitors search for a meaning that is related and important to them in the interpretation. Solely presenting facts cannot create this. Interpretation can create understanding, understanding creates appreciation for a heritage site, and appreciation creates protection. That means the primary goal of preserving heritage sites can be achieved through good interpretation (Tilden, 2007/1957, pp. 59-67).

Principle 5: "Interpretation should aim to present a whole rather than a part and must address itself to the whole man rather than any phase" (Tilden, 2007/1957, p. 35). This principle means that interpretation should aim for a holistic picture of a historical event. It needs to explain the relationships, reasons and connections between. An interpreter should begin with the main thought and the broad idea, and add slowly and gradually, side facts. Furthermore, it should address the visitor "as a whole", meaning that their imagination needs to be addressed, for example, through participation. Being part of the interpretation increases attention, interest, excitement, and learning. It is also important to consider that most interpreters overestimate the previous knowledge of visitors, as they look at the interpretation from their perspective as professionals. Lastly, it is important to mention that despite limited budget

and staffing, heritage sites can still create participation through atmosphere if they use their imagination (Tilden, 2007/1957, pp. 68-75; Tilden, 2007/1957, pp. 106-111).

Principle 6: "Interpretation addressed to children (say, up to the age of twelve) should not be a dilution of the presentations to adults but should follow a fundamentally different approach. To be at its best, it will require a separate program" (Tilden, 2007/1957, p. 35). So, children require a specific program based on their interests and needs. It can include multiple senses, especially the sense of touch, and superlatives, such as "the oldest building in the town" and "the biggest fossil in the world". Although these principles are specifically significant for children, adults also appreciate them. Additionally, the concern of wear and tear or the risk of breaking valuable exhibits through touching can be reduced because better interpretation improves understanding and appreciation for exhibits. Furthermore, Tilden highlighted that not all exhibits are so valuable, as they might exist in high numbers, or there can be creative ways to implement the way of touching without risking damage (Tilden, 2007/1957, pp. 76-85). According to Timothy (2011, p. 231), this principle can also be transferred to a more diverse range of visitors besides children, such as cultures, groups, and abilities.

Despite being formulated in 1957, Tilden's principles remain highly relevant today. Ablett and Dyer (2010, pp. 18-20) showed in their research how today's heritage sites could improve their interpretation if they followed the philosophy and principles collected by Tilden. However, while they provide a strong foundation for meaningful interpretation, they address cognitive inclusivity only to a certain extent. For example, it is not considered how visitors with different cognitive abilities are impacted by information processing.

2.2.3 Inclusive heritage interpretation and its current challenges

The main idea of inclusive heritage interpretation is that it is created in a way that welcomes and is accessible to everyone (Pegg & Stumbo, 2021, p. 288). There has been a newer development, in which heritage interpretation is not only seen as a communication and management tool, but as an opportunity to transform the world on an eco-social basis (Domínguez, 2024, p. 23): "Interpretation is also a tool for social transformation, promoting critical thought among citizens who are committed to the community and its values." Inclusion is one part of this development, which aims to create interpretation for a broader

audience, including different cultures and beliefs, abilities, educational backgrounds, and interests (Domínguez, 2024, p. 23).

According to Pegg and Stumbo (2012, p. 291), inaccessible heritage interpretation reduces participation and enjoyment for marginalised groups. UNTWO et al. (2023) highlighted the importance of inclusive heritage interpretation as it increases economic development by attracting a broader audience, hiring more diverse people, and creating new products and services. Furthermore, it benefits local communities and general society by improving the local infrastructure and offering employment for all, increasing life quality and satisfaction of needs, enhancing learning and education possibilities, creating a feeling of belonging to culture, and understanding the importance of preservation (Deffner et al., 2015, p. 5; Domínguez, 2024, p. 23; UNWTO et al., 2023, pp. 2-3). It can help reduce prejudices and increase societal equality.

In recent years, there have also been approaches to make these practices more inclusive. One of the most researched ones is the increase in the number of languages besides the native language and English (Timothy, 2011, p. 247). For many non-native speakers, English texts can be overwhelming and texts with specific terminology, for example, in a historical context, can be too difficult. Therefore, many heritage sites also offer information in the languages of their visitors, who come most often (Timothy, 2011, p. 247). Additionally, there are guidelines for visitors with physical disabilities, for example, appropriate use with wheelchairs, Braille texts, and different heights of exhibits; cultural sensitivity, treating sensitive places with dignity towards the oppressed, and children and their needs and interests (Timothy, 2011, pp. 247-249). Lastly, there are certain practices for people with intellectual disabilities. Timothy said that “interpretation should be done in such a way that is not intimidating but rather to their own needs. Storytelling and other media devices that allow for extensive learning opportunities for visitors with learning disabilities should be adopted” (Timothy, 2011, pp. 247-248).

However, there have been only minor improvements in making heritage sites more inclusive. Only the bare minimum is often adapted (Pegg & Stumbo, 2012, p. 292). Heritage sites face severe challenges for multiple reasons: limited budget, diverse visitor needs, and the aim to preserve. Firstly, many heritage sites lack the financial resources to improve their interpretation and facilities through, for example, interactive tools and a bigger variety of

information channels (Timothy, 2011, pp. 296-298). This is especially concerning for smaller towns and their historical sites, which usually have smaller visitor numbers (Timothy, 2011, pp. 296-298). Secondly, there is no universal approach to heritage interpretation, as visitors have different needs and preferences (Ablett & Dyer, 2010). Many heritage sites attempt to tailor their interpretation to specific target groups, who are often persons highly interested in history and heritage tourism. As presented in Chapter 1.2, these customer groups are often highly educated and have a high income (Ablett & Dyer, 2010; Burton & Scott, 2007; Dawson, 2014, pp. 991-1005). On the other hand, cognitive inclusivity is often underrepresented in these considerations, and sites do not assess how different persons learn or their learning preferences.

Thirdly, there is a tension between inclusivity and preservation. This means that many historians and heritage site managers assess the goal of preservation as higher and therefore, specific adaptations to make places more inclusive are neglected (Lwoga & Mapunda, 2017, p. 51). Therefore, it is important to find a compromise between preservation and inclusive practices (Garrod & Fyall, 2000, p. 702; Pearn, 2011, pp. 211-212). While this has been widely discussed in the context of physical access, there is little research and practice on how cognitive inclusivity can be integrated without omitting preservation goals. Despite these challenges, a development towards inclusive heritage interpretation is needed. As discussed above, heritage interpretation provides important knowledge and learning opportunities. Therefore, the aim of providing learning opportunities and knowledge should be prioritised. Furthermore, Garrod and Fyall (2000, p. 691) demonstrated the importance of accessible heritage interpretation, because “heritage only has significance to the extent that it benefits people. If people are prevented from experiencing a heritage asset, it can no longer be part of their heritage.”

3. THEORETICAL BACKGROUND ON LEARNING THEORIES

The theoretical background is based on three learning theories: Cognitive load theory, schema theory, and Universal Design for Learning. Each of these theories, their origin, main concepts, and meaning for heritage interpretation are explained individually below. Finally, based on the theoretical framework, six practices for cognitively inclusive heritage interpretation are presented.

3.1 Cognitive load theory

The cognitive load theory tries to explain how humans learn and store information and knowledge. John Sweller and his colleagues presented the theory in 1988, and it is commonly known as human cognitive architecture. Firstly, it is essential to distinguish between biologically primary and secondary knowledge. Biologically primary knowledge is information that humans acquire unconsciously and that is necessary for survival (Likourezos, 2021; Sweller, 2011, pp. 39-41). This knowledge is, for example, how to speak, social skills, problem solving, and recognising other persons. On the other hand, the biologically secondary knowledge is acquired through teaching and learning and includes mainly domain-specific skills, for example, reading, writing, mathematics, and history. It requires cognitive processing and effort to understand, learn, and store this knowledge. This process is explained through the cognitive load theory (Likourezos, 2021; Sweller, 2011, pp. 39-41).

As shown in Figure 2, the memory consists of three parts: the sensory, working, and long-term memory. All information which humans receive is first filtered in the sensory memory (Likourezos, 2021; Medical College of Wisconsin, 2022; Sweller, 2011, pp. 42-57). Only a few selected pieces of information, that catch the human's attention, are processed into the working memory. The working memory is the conscious part of the memory, where new information is stored temporarily, usually for about 20 seconds. Lastly, the long-term memory is unconscious, and here information is stored after we have learnt something. It can be stored indefinitely, although sometimes knowledge is forgotten if it has not been used for a long time (Likourezos, 2021; Medical College of Wisconsin, 2022; Sweller, 2011, pp. 42-57).

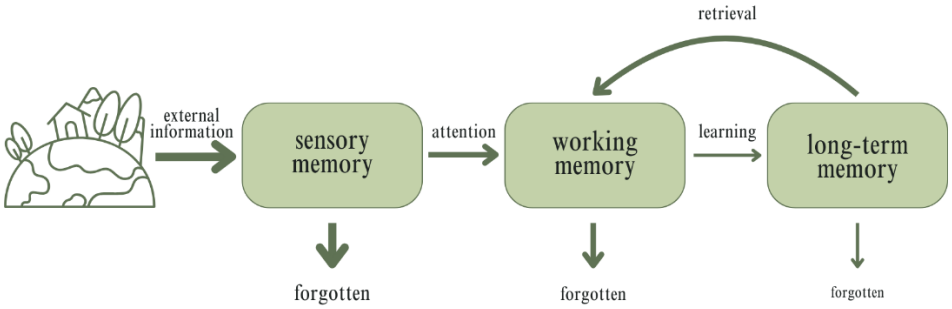

Figure 2. Cognitive load theory.

Source (adapted): Century, 2022.

The knowledge in the long-term memory is stored in so-called schemas (Likourezos, 2021; Medical College of Wisconsin, 2022; Sweller, 2011, pp. 42-57). These schemas are patterns and frameworks with concepts and explanations. A more detailed explanation can be found in Chapter 3.2. Once new information is processed in the working memory, the suitable schema is automatically transferred from the long-term memory to the working memory to deal with familiar information. The long-term memory has no limits; however, the working memory can store only five to nine items, meaning chunks of information, and only two to four items can be worked on at the same time. This is commonly known as cognitive load. If too much information needs to be processed, it is called cognitive overload, which we experience as humans as overwhelming and sometimes even stressful. The working memory has only limits when dealing with new information and when this information is not familiar or does not fit into a schema from our long-term memory. When information is finally stored in our long-term memory, the content of our mind changes. This is the process of learning (Likourezos, 2021; Medical College of Wisconsin, 2022; Sweller, 2011, pp. 42-57).

The cognitive load consists of three types: intrinsic, extraneous, and germane (Sweller, 2011, pp. 57-63). All types add up to the capacity of our cognitive load. Once the capacity of the working memory is reached, it results in cognitive overload. The intrinsic load refers to the difficulty and complexity of information. This includes the number of information pieces,

which must be processed simultaneously, to understand something new; the level of interactivity between those pieces, meaning if the pieces could be also understood isolated; and how the information pieces correlate to existing schemas of the learner, so their prior knowledge (Sweller, 2011, pp. 57-63).

To understand the intrinsic load better, I will show it in one example of possible heritage interpretation, the outbreak of the Finnish civil war. To understand the causes of the Finnish civil war, visitors need to understand multiple pieces of information simultaneously, which requires a high load due to the complexity of each piece of information. However, a heritage site could reduce the intrinsic load by isolating the information. For example, firstly, explaining the economic reasons, secondly, the political tensions, and thirdly, the class separation. A visitor, who learnt about the Russian Revolution beforehand, for example at school, can process the information more easily at a lower level of intrinsic load, as some of the information pieces might correlate to their prior knowledge.

In general, it is important to understand that intrinsic load cannot always be reduced due to its pre-set nature, and sometimes it is even beneficial to increase it for a higher learning outcome (Sweller, 2011, p. 63). However, the extraneous load should always be reduced, and it is also the load which can be influenced the easiest. The extraneous load refers to the learning environment and how the information is presented for processing through instruction (Sweller, 2011, p. 63). There are multiple practices and effects in the cognitive load theory that aim to reduce it. However, I present below the most common ones, which can also be applicable to heritage interpretation. The main idea is to reduce the general information input by shortening or leaving out information that is not important to understand the central concept (at least at the beginning).

Firstly, there is the worked example effect, which means that a well-known example is presented as part of the instruction to explain a problem-solving procedure (Sweller, 2011, pp. 64-65). Developing a solution for complex phenomena can lead to an overload relatively quickly. This effect addresses pre-existing schemas, as a working example of a problem can be used as a new schema, which decreases then the cognitive load, once a similar phenomenon occurs (Sweller, 2011, pp. 64-65). Transferring it to heritage interpretation could mean that causes and relationships are part of the explanation. Often heritage interpretation focuses on the events and facts, and not on how they are connected.

Secondly, the split-attention effect occurs when multiple sources present one chunk of information, for example, a graphic with text explaining the graphic (Sweller, 2011, p. 66). A learner must combine the different sources, which requires an immense amount of cognitive load. However, if the sources are combined, for example, the graphic includes specific important terms and descriptions within the picture, it can decrease the load (Sweller, 2011, p. 66).

The modality effect refers to whether an information piece is explained through two different modalities, such as auditory and visual (Low, 2012; Sweller, 2011, pp. 67-68). If the information piece is complex, it can decrease the load, because a person can process two modalities simultaneously, as the phonetic (auditive) and visual processing work independently. For example, if a person listens to an audio while looking at a graphic. However, this effect does not occur if the intrinsic load is low (Low, 2012; Sweller, 2011, pp. 67-68). On the other hand, the redundancy effect explains that two modalities should not be used when they explain something redundant (Sweller, 2011, pp. 68-69). For example, a text sign should not be read aloud, as this would create cognitive overload because it cannot be processed simultaneously.

Additionally, the transient information effect concerns all temporary formats, such as audio and animations, meaning content that is only available for a short period of time (Sweller, 2011, pp. 71-72). This can create cognitive overload, as learners usually need a certain amount of time to integrate new information into their schemas. If the information has disappeared already, they have no chance of creating a new schema, and the information will be forgotten (Sweller, 2011, pp. 71-72). In heritage interpretation, this could be especially concerning for interactive tools. Lastly, the expertise reversal effect explains that the reduction of information and presentation of, for example, worked examples, can reduce the effects of learning for experts, so people who have already pre-existing knowledge and schemas in the concerning field (Sweller, 2011, p. 70). For them, some principles might be unnecessary or even limiting (Sweller, 2011, p. 70).

The last part of the cognitive load is the germane load, which integrates the new knowledge into its schemas, meaning that either existing schemas are adapted, or new schemas are developed (Sweller, 2011, pp. 72-73). This load should be increased in education, as it is the final step of the learning process and enhances a person’s knowledge and increases critical

thinking (Sweller, 2011, pp. 72-73). In summary, there are three design principles for education: Firstly, to decrease the extraneous load, secondly, to manage the intrinsic load, and thirdly, to optimise the germane load (Sweller, 2011). So, the learning environment and learning content should be adapted (mainly reduced), previous schemas should be used to help understanding complex phenomena, and learners should be encouraged to build their own structures and relationships to develop strong schemas.

This theory has been criticised due to its negligence of social and emotional character developments of children, which have effects on their learning process as well as the fact that cognitive load is not measurable empirically and therefore limits possible conclusions (Watson, 2019). Despite ongoing criticism, the main idea of the theory seems to be correct, meaning that the level of difficulty needs to be appropriate, as well as pre-existing knowledge increases the learning outcomes, and it is the task of an instructor to guide learners to their connections to their schemas (Watson, 2019). There have also been many studies based on the cognitive load theory, which prove their main concepts to be correct (Cook, 2006; Sayago & Blat, 2010).

3.2 Schema theory

Closely related to the cognitive load theory is the schema theory, also known as cognitive schema theory. The theory tries to explain how information and knowledge are organised, interpreted and classified in our memory (Hedge, 2022; Meylani, 2024). The first important influences on this theory were made by Frederic Barlett and Jean Piaget in the 20th century. The main idea is that all knowledge is stored in schemas, which are, as explained in Chapter 3.1, cognitive frameworks in the long-term memory. When new information is encountered and can be linked to an existing schema, that schema can be activated and transferred to the working memory through a cognitive shortcut. Therefore, schemas have a high impact on what we pay attention to, how we interpret information, how we memorise it, and how we make decisions (Hedge, 2022; Meylani, 2024).

One primary function of schemas is to guide attention (Meylani, 2024, p. 6). Pre-existing schemas help us to focus on specific aspects of new information. If a chunk of new information is related to a relevant schema stored in long-term memory, we are more likely to pay attention to it. Once recognised, the relevant schema gets activated and transferred to

the working memory (Meylani, 2024, p. 6). In this way, individuals select information that is significant to them based on previous experiences, prior knowledge, beliefs, and expectations (Copeland, 2006, p. 85; Hedge, 2022, p. 2).

Hence, prior knowledge plays a crucial role in this process of learning (Cook, 2006; Hedge, 2022). If an individual has a high level of prior knowledge and many existing large schemas on a specific topic, those can be retrieved during the learning process. This facilitates faster and more efficient understanding. Although a schema can contain large amounts of information, it is always processed as a single unit in the working memory (Cook, 2006; Hedge, 2022). Therefore, schemas can reduce the cognitive load in the working memory, as only one chunk of information needs to be accessed (Kalyuga et al., 2003). Furthermore, persons with a high level of prior knowledge are usually better at identifying relevant information through schema activation, which is more challenging for persons with little to no prior knowledge (Cook, 2006). Therefore, it can be said that prior knowledge is an important determinant of learning outcomes (Cook, 2006).

In addition to guiding attention, schemas also have a high impact on learning outcomes by shaping how knowledge is integrated and classified (Meylani, 2024, p. 6). Piaget (1952) divided schema construction into assimilation and accommodation. Assimilation involves integrating new chunks of information into existing schemas, while accommodation refers to correcting existing schemas or forming new schemas in response to information that does not fit. Usually, before accommodation, there is a cognitive conflict when new knowledge challenges prior learnings (Meylani, 2024, p. 6). In this context, Copeland (2006, p. 84) defined learning as a “self-regulatory process of resolving inner cognitive conflicts that often become apparent through concrete experiences, collaborative discourse and reflection”.

A simplified example can help illustrate this process: A child learns what a car is. The child’s memory creates a schema labelled “car”, which initially includes multiple attributes, such as four wheels, a roof, several windows, a large size, a moving object, and the colour black. Later, the child sees a yellow car and, after being told by their parents that this is also a car, the child updates the schema (assimilation) to include various colours. When the child sees a motorcycle for the first time, which can also drive but only has two wheels, it is reminded about the schema “car”, but encounters a cognitive conflict due to the other attributes, such as the number of wheels and the missing roof. As a result, a new schema called “motorcycle”

is created. Eventually, the child develops a broader schema called “vehicles”, which includes both “car” and “motorcycle” schemas (accommodation).

Despite their critical role in learning, schemas can also lead to misinterpretations, particularly when information is generalised or oversimplified (Hedge, 2022; Meylani, 2024). This can result in the formation of stereotypes and cognitive biases. Cognitive biases occur when mental shortcuts lead to systematic errors in perception, judgment, or memory. Because schemas help us to make sense of knowledge quickly, they can also distort reality by filtering information through pre-existing assumptions and expectations. Individuals are more likely to notice, interpret, and remember information that confirms their existing beliefs while neglecting contradictions (Hedge, 2022; Meylani, 2024).

Applying the schema theory in the context of cognitive inclusivity means recognising that every individual has different pre-existing schemas, including their prior knowledge, experiences, and beliefs (Copeland, 2006, p. 83). Learners with limited or culturally different background knowledge might struggle to connect new information to existing schemas. This can result in cognitive overload or misunderstanding. To support cognitively inclusive learning environments, it is therefore essential to provide sufficient context, use clear and familiar language, and multiple entry points into the content. Heritage interpretation can serve as a bridge between the interpreter and the visitor, meaning good interpretation can create new schemas in visitors (Copeland, 2006, p. 83).

3.3 Universal Design for Learning

The concept of Universal Design for Learning (UDL) originates from the concept of Universal Design, which is mainly used in architecture (King-Sears, 2009, p. 199). It consists of principles that support accessibility and inclusivity for people with limitations to participate fully. Examples are traffic lights at pedestrian crossings, which can be seen and heard, ramps in addition to stairs, and benches at public places to rest. As previously mentioned, these practices are usually also beneficial for individuals without physical disabilities (King-Sears, 2009, p. 199). The main aim of UDL is to facilitate the learning process and to make education accessible to all students (King-Sears, 2009). According to Meyer et al. (2014), society should make learning, education, and cultural participation accessible to all. They explained that traditional educational systems are limiting students in learning instead of supporting

them (Galkiené & Monkevičiené, 2021, pp. 6-8). UNESCO (1994) stated that “every child has a right to learn and achieve results at a level accessible to them; […]; and the most efficient schools are those that implement inclusive education” (Galkiené & Monkevičiené, 2021, p. 7). Although UDL and inclusive education are related to formal education, these ideas and principles can also be used in informal education, such as heritage interpretation.

UDL is based on the concept of inclusion for all by Vygotsky, who was one of the pioneers in more inclusive education (Galkiené & Monkevičiené, 2021, pp. 5-6). Inclusion for all aims at identifying hindrances in education, reducing these barriers for students with disabilities, and enabling social and cultural grounds for them. It includes fair participation, assistance for needs, collaboration between different fields, and increased interaction. There are two reasons for barriers: disabilities and social displacements. Disabilities are due to biological reasons, and social displacements are due to social and cultural grounds, meaning that society has created an environment which excludes certain groups of people. Therefore, it is important to understand that every person learns differently and needs different settings for learning (Galkiené & Monkevičiené, 2021, pp. 5-6).

Meyer and Rose, who were the pioneers of UDL, created principles and an educational approach on how to improve educational settings for learning for all students (King-Sears, 2009, p. 199; Navaitiené & Stasiūnaitiené, 2021, p. 25). There are three main principles: multiple means of representation (what), multiple means of action and expression (how), and multiple means of engagement (why) (Galkiené & Monkevičiené, 2021, pp. 11-12). Firstly, representation is part of the recognition networks and refers to how content is presented and processed. As already mentioned, every person processes information differently and therefore needs different methods to learn. The information processing is shaped through preconditions, such as the educational background, the ability to use new information, and to find models, which can be used to explain new knowledge. Various knowledge sources, for example, a combination of images and sounds, should be used. Other examples are different languages, more animations, and more interactive tools (Galkiené & Monkevičiené, 2021, pp. 11-12). This area is significant for inclusive heritage interpretation.

Secondly, students should be able to present the knowledge they have gained in different ways (Galkiené & Monkevičiené, 2021, pp. 12-13). For learning, it is important to express what has been understood and learnt; however, how it is presented can differ. In many

curricula, there is an emphasis on written reports; however, oral, physical, and artistic presentations should be considered as well. This is the strategic network (Galkiené & Monkevičiené, 2021, pp. 12-13). Thirdly, engagement is part of the affective network, which creates emotions (Galkiené & Monkevičiené, 2021, pp. 13-14). This explains that students should be actively engaged in the learning process to increase their interest in specific topics. Collaboration and hands-on activities can increase the enjoyment of learning. It also aims to improve problem-solving skills and self-efficacy. Lastly, positive social relationships are highly important for learning outcomes as they can increase motivation. This can be achieved, for example, through valuing diversity and cultural sensitivity and the different strengths of students (Galkiené & Monkevičiené, 2021, pp. 13-14).

3.4 Cognitively inclusive practices

This chapter presents six cognitively inclusive practices and is based on the theoretical framework. I synthesised these practices from the key insights of the learning theories, which are the importance of reducing extraneous cognitive load, increasing germane load, creating connections to visitors' prior knowledge, and offering information in multiple forms. In addition, the practices are guided by inclusive tourism approaches, such as mutual benefit and including marginalised groups in tourism practices. Lastly, Tilden's heritage interpretation principles emphasise the need to adapt interpretation to different audiences and to involve people more actively in the creation of meaning. The six selected practices offer concrete ideas for improving cognitive inclusivity, and I chose and partly formulated them based on their importance for cognitive inclusivity. Although they might initially appear to target specific visitor groups, they might also enhance learning experiences for other audience groups, which is researched in this paper. These practices build the foundation for this study's interview questions and data analysis.

3.4.1 Plain Language and Simplification

Plain language refers to clear and concise communication that can be easily understood by a broad audience (Plain Language Action and Information Network, 2011). It usually involves short sentences, less jargon, and simple vocabulary. The aim is to make information more accessible without reducing the meaning behind the content (Plain Language Action and Information Network, 2011). Vollenwyder et al. (2018, pp. 520-521) found that the use of plain language has positive effects on both persons with learning difficulties and without

these. In their study, the texts in plain language were perceived as more understandable and contributed positively to the user experiences (Vollenwyder et al., 2018).

As plain language helps to simplify the presented content, it can also reduce possible cognitive overload, which might be caused by unfamiliar words or academic writing (Sweller, 2011, pp. 63-65). Another important feature of this practice is the use of the English language. The English language section at heritage sites not only serves English-speaking natives, but also visitors whose native language is not offered as an interpretation language. However, this interpretation often aims at native English speakers, resulting in a relatively complex language with unknown terms to all English speakers. Dawson (2014, p. 991) showed in her study that the English level at science museums can be too demanding or challenging for non-natives. As previously discussed, the multilingual interpretation is relatively common and well-researched, however, it is important to highlight, that not every language can be presented (at least so far) and therefore, the use of English is necessary to serve customers, whose native language is not present (Timothy, 2011, p. 245).

Additionally, CAST (2024) developed a specific section in their guidelines for UDL about how vocabulary, symbols, and language structures need to be clarified to make information more accessible. Some implementation ideas refer to sentence structures, word choices, text organisation, and giving definitions (Plain Language Action and Information Network, 2011). Firstly, the sentence structure should be short and straightforward. Only one idea per sentence should be presented, and the main message should be mentioned first. For example, it is not recommended to begin a sentence with “Besides the high poverty rate in the region, the family also had challenges with farming”. It would be better to write or say: “The family had challenges with farming, in addition to the high poverty rate in the region”. Additionally, texts should have limited multi-clauses and include no slashes. These usually irritate readers (Plain Language Action and Information Network, 2011, pp. 49-61).

Secondly, the vocabulary can be simplified through avoiding jargon, reducing unnecessary words, and minimising abbreviations (Plain Language Action and Information Network, 2011, pp. 19-48). Jargon refers to technical terms that are often only known by experts in a particular field. In heritage interpretation, some jargon vocabulary examples are “absolutism”, “bourgeoisie”, and “feudalism”. Important terms should not be omitted; however, in this case, they are explained. Unnecessary words, such as “on a daily basis” instead of

"daily", should be reduced, as they increase the cognitive load without benefit. Lastly, abbreviations should also be reduced and replaced by "nicknames". For example, the CCP (Chinese Communist Party) could be replaced by "the party" after an introduction (Plain Language Action and Information Network, 2011, pp. 19-48).

Thirdly, texts need to be organised in paragraphs. Paragraphs should be short and include headings to ensure readability. The paragraph should always explain the main information first and continue only with more detailed information for creating a logical flow. Additionally, texts can address readers directly (Plain Language Action and Information Network, 2011, pp. 62-68). Lastly, if jargon and technical terms were used, they should be defined well (Plain Language Action and Information Network, 2011, pp. 41-44). Definitions must be offered rarely and in easy words, as well as at the beginning of the text. Also, the text should always use the same terminology to reduce confusion (Plain Language Action and Information Network, 2011, pp. 41-44).

3.4.2 Visualised communication

Visualised communication aims to reduce the number and length of texts in heritage interpretation. It includes visual elements in combination with shorter texts, such as images, figures, diagrams, infographics, symbols, maps, videos, and audio (which use auditory instead of visual components). The main aim is to complement or reduce the reliance on texts and make the knowledge more accessible (Galkienė & Monkevičienė, 2021, pp. 11-12). This could reduce the extraneous cognitive load, as long texts can be perceived as overwhelming (Alabi, 2024; Cook, 2006).

According to Alabi (2024, p. 6), the use of visual aids can increase the comprehensibility and information retention. Especially in social studies and history, visual aids, such as maps, timelines, and infographics, can help explain complex connections and present a more holistic approach (Alabi, 2024, p. 11). Cook (2006, pp. 1082-1084) highlighted that many individuals prefer animated and interactive content, and it can have a positive impact on the learning outcome if prior knowledge is sufficient on the related topic. In practice, this could be found in complex geographic information displayed through a map; technical explanations can be displayed through a model or illustration; and a diagram can explain a historical

development. Signs should include pictograms besides words to make them universally recognisable and make the consumption easier.

To make visualised content as inclusive as possible, it is important to use clear and high-quality visuals, which are easy to recognise and culturally neutral (Cook, 2006, p. 1084). Furthermore, it is good to combine these visual aids with text that can provide a basic introduction to the topic (Cook, 2006, p. 1084). However, some studies show that the simultaneous presentation of visual and textual content can have negative effects on the learning outcomes for persons who are experts in the field (Cook, 2006, p. 1079). In general, it can be said that "instructional presentations that take advantage of both visual and verbal (in the form of text or audio) modalities are more beneficial than presentations that rely on either visual or verbal information alone" (Cook, 2006, p. 1079). Lastly, the visual content should be accessible through auditory options for persons with visual limitations. Another benefit could be to combine the audio material with the textual or visual presentation. For example, when playing the audio, a light highlights the corresponding part on the visual presentation (Cook, 2006, pp. 1082-1084).

3.4.3 Contextual framing

Contextual framing provides visitors with background information that is necessary to understand heritage narratives (Tessmer & Richey, 1997). It can include historical, societal, and cultural settings that help make the presented content more understandable and meaningful (Alshumaimeri, 2023; Tilden, 2007/1957, pp. 36-43). The aim is to create a comprehensive framework for visitors to connect with the told stories. Contextual framing can include, for example, historical context, geographical references, comparisons to parallel events, and links between past and present developments (Alshumaimeri, 2023; Tilden, 2007/1957, pp. 36-43).

As schema theory explains, one key reason for using contextual framing is its connection to visitors' prior knowledge (Cook, 2006). If visitors already have related knowledge, new facts can be integrated more smoothly. However, when no such prior knowledge exists, contextual framing can help in building new schemas by creating connections to existing schemas and knowledge that is commonly known (Cook, 2006). Tilden (2007/1957, pp. 36-43) highlighted in his first principle the importance of relating interpretation to the visitor, which can

be achieved through building bridges of new information to existing knowledge. For example, when presenting ancient trade routes like the Silk Road, interpreters could compare them to today's global online shopping networks. This could help visitors relate distant historical events to familiar everyday experiences.

Additionally, contextual framing might simplify complex happenings through a clearer structure of presented content (Alshumaimeri, 2023; Tessmer & Richey, 1997). Visitors can follow it more easily by first presenting general, easily understandable information before gradually introducing more detailed content, which can be consumed by visitors, who are specifically interested (Alshumaimeri, 2023; Tessmer & Richey, 1997). This approach could reduce the extraneous load, enabling visitors to focus on meaningful learning rather than being cognitively overloaded by too many isolated and detailed facts (Sweller, 2011, p. 63). Lastly, this principle can be easily combined with practice two (visualised communication).

Contextual framing is unique for every narrative; however, I present a few ideas to understand the concept better. Firstly, it can create geographic relations by simultaneously explaining what has happened in nearby or distant regions to put local stories within a global context, which are commonly known. Secondly, it can be helpful to create parallels to better-known events, for example, comparing a local independence movement to the American independence movement. Thirdly, it can be helpful to build bridges to today. It can highlight how historical events influenced today's society. Lastly, complex concepts can be broken down by explaining them in everyday experiences. For example, to explain a complex economic system like feudalism, interpreters could describe the life situation of a specific farmer and his family.

3.4.4 Provoking emotion

Emotions can play a significant role in learning and memorising. Tyng et al. (2017) demonstrated that "emotional events are remembered more clearly, accurately and for longer periods of time than are neutral events". Heritage interpretation can create a deeper and more personal connection to the knowledge and information by provoking emotions, such as empathy, nostalgia, excitement, and discomfort. Furthermore, emotions can catch the first interest more easily than solely fact-based presentations (Tyng et al., 2017).

Watson (2016, p. 76) highlighted that research about integrating emotions in heritage interpretation has been limited, although emotions increase the learning outcome; for example, excitement can increase interest, and empathy can increase understanding. Furthermore, emotions might create a missing connection between the visitor and the explained content, which would be more difficult without emotions, which could increase the germane load (Sweller, 2011, pp. 72-72). Lastly, emotionally neutral information is usually more difficult to remember (Watson, 2016, p. 76).

Some practical ideas on how to implement emotions are music and sounds, videos, personal stories, and humour (Watson, 2016, p. 87). Firstly, music and sounds can create a particular atmosphere and setting, which helps visitors embrace the situation more deeply. For example, if a famous song from the 1920s is playing, visitors often feel an immediate connection to "older" times. Secondly, videos, such as short documentaries and stories, can make the content livelier. Thirdly, personal stories from people who can tell about their experiences during a particular historical setting usually create empathy and a better understanding. Lastly, humour can be used to tell fun facts and side stories that might provoke excitement. Often, these fun facts are the information that most visitors remember and keep telling others (Turnšek et al., 2019, p. 116).

Emotional engagement leads to deeper processing, which can lead to better memorisation of information and knowledge (Watson, 2016). Due to the created connection, visitors can have a more personalised experience and increase the possibility of reflection and discussions. Lastly, emotions can create a longer-lasting impression on the heritage site, leading to a possible positive impact for heritage sites (Watson, 2016). Additionally, Tilden (2007/1957, pp. 69-67) highlighted already the importance of emotions in heritage interpretation. He claims that effective interpretation does not consist of providing solely information but provokes the visitor to think and engage with the knowledge. This can be achieved, for example, through emotions (Tilden, 2007/1957, pp. 59-67).

However, it is important to implement emotion-provoking elements in a limited way (Watson, 2016; pp. 80-82). Too many emotions, specifically negative ones, can also be overwhelming, which would have a negative effect. Furthermore, many visitors pay great attention to authenticity, so overly dramatised content could be perceived as unauthentic. Therefore, it is advisable to use emotions, which were an actual part of the historical event, for

example, love, loss, resilience, or hope. Lastly, visitors should not be left alone with their emotions. It is important to help process, reflect, and discuss them, especially regarding sensitive topics, such as those at dark tourism places. On the other hand, emotions can be misused for propaganda purposes; for example, a specific narrative can be projected more easily through emotions (Watson, 2016, pp. 80-82).

3.4.5 Storytelling

The US National Storytelling Network (2025) defines the term storytelling as an "art of using words and actions to reveal the elements and images of a story while encouraging the listener's imagination". Its main idea in heritage interpretation is to use either historical or fictional characters and build stories around them (Alterio, 2002). The stories can display either actual historical happenings or fictional ones, which are based on historical data. Instead of presenting facts isolated, storytelling provides a clear narrative structure that helps to understand complex information (Alterio, 2002). Storytelling can reduce the information overload by not presenting fact after fact, but by presenting a consistent narrative (Lucarevschi, 2016). Personal stories that talk about struggles, emotions, and overcoming a person's challenges, are usually attention-catching for many people. Lucarevschi (2016, pp. 36-37) summarised in their research that storytelling makes information more comprehensible as the stories' language is more commonly used and easier to access. Some historical events feel distant or irrelevant to visitors. A story can create a personal connection, which might create relevance and closeness. Furthermore, storytelling can be more engaging and relatable due to the possibility of creating an atmosphere and emotions, which facts often cannot convey. Lastly, storytelling might increase the attention span of visitors, as stories usually include some sort of growing tension, which attracts many people to continue consuming. In summary, storytelling increases the enjoyment, engagement, and the ability to memorise information (Lucarevschi, 2016).

Storytelling can be used in two ways: firstly, to explain a complex historical situation in one consistent narrative, and secondly, to add interesting side facts through short, engaging background stories. The stories can be told visually, auditorily, and interactively, for example through illustrations, old diaries, guided tours, and multi-options stories, in which visitors can decide how the story continues (Timothy, 2011, pp. 228-258). To increase the positive effects of storytelling, the stories should have a clear structure and relatable characters

(Bonds, 2016, pp. 121-133; Tilden, 2007/1957, pp. 36-43). A story, that is difficult to follow, because it is not consistent or too complicated, has the same effect as long, fact-based texts. People might lose interest or have difficulties following the content. Relatable characters are important so that visitors can build a connection to the story. If a character has no flaws or struggles to overcome, the story will seem too fictional and especially not relatable to the visitors' own lives. A character should present their emotions, struggles, and desires. Another important aspect is the foundation of research for stories. Stories can include fictional elements to increase engagement; however, the historical accuracy cannot be neglected. The story needs to add to the visitor's learning. It is also good to mention, in some way, what is fictional. Lastly, the story should encourage visitors to think about the message of the story. This could be engaged, for example, through building a bridge to today's world at the end of the narrative (Bonds, 2016, pp. 121-133; Tilden, 2007/1957, pp. 36-43).

3.4.6 Interactive experiences

Interactive experiences are all kinds of channels, tools, and programs that increase participation and interaction. These tools can be digitalised, such as touchscreen displays, online games, virtual reality offers, and apps; or non-digital tools, such as hands-on exhibits, role plays, board games, and discussion forums. Interaction and participation are based on the idea that the presented content depends on learners' actions during the learning process (Moreno & Mayer, 2007, p. 310). They can increase the engagement, which leads to active learning and helps memorisation. Interactive experiences at heritage sites allow visitors to explore history and culture through learning by doing (Moreno & Mayer, 2007).

One important field of interactive experiences is games (Zeybek & Saygı, 2024). Gamification, which means the use of elements of games in non-gaming environments, in education, is a growing trend. In general, according to Zeybek and Saygı (2024), gamification has a positive effect on learning outcomes and can include problem-solving tasks. Due to the playfulness and competition of games, they can increase enjoyment and intrinsic motivation in education (Zeybek & Saygı, 2024). Additionally, games can give immediate feedback to newly constructed knowledge, and they can often be played at the individual pace of the visitor (Christopoulos & Mystakidis, 2023). However, gamification can overemphasise rewards and therefore might be only an external motivator, which does not increase intrinsic motivation. Furthermore, it can distract people from the original knowledge and learning

purpose (Christopoulos & Mystakidis, 2023). Another common tool is hands-on exhibits, which involve the sense of touch and increase activities. Thirdly, discussion stations can ask visitors to participate in evaluations or problem-solving. For example, there could be a physical or digital board where people can answer the question “What would you have done?”. So, visitors can share their opinions on ethical dilemmas.

The most obvious benefit is the increase in engagement and enjoyment. It can contribute to the learning outcome of remembering new knowledge and understanding the importance of the heritage site (Roussou, 2004). Usually, active participation leads to better memory retention compared to passive reading (Copeland, 2006, pp. 84-85). Furthermore, it can encourage critical thinking, as visitors make their own choices, build their own opinions, and discuss critical topics (Moreno & Mayer, 2007, pp. 313-314). Interactive experiences can be a valuable tool for aiding visitors in constructing new knowledge. Lastly, as it often includes other senses, it is also a tool for accessibility and inclusion, which is explained further below (Moreno & Mayer, 2007, pp. 313-314).

To use these tools effectively, it is important to provide clear instructions which are easy to understand and simple to follow (Moreno & Mayer, 2007, pp. 315). If the whole task is too complex or it might take too long until visitors can start with the actual task, the motivation might be lost too quickly. Moreno and Mayer (2007, p. 315) highlighted that learners must be guided through the learning process to receive new information. Additionally, the interactive experiences must serve a diverse range of visitors, meaning they must have equitable access (Moreno & Mayer, 2007, p. 315). Therefore, it is important to pay attention to the design, language, and digital access based on the age, abilities, and knowledge of visitors (Christopoulos & Mystakidis, 2023; Moreno & Mayer, 2007, pp. 316-318). For example, the tools must be usable for persons with impairments, such as an auditory version for blind visitors. Another aspect is the possibility to adjust the pace, for example, through forwarding, pausing, and double-speed options (Moreno & Mayer, 2007, pp. 319-320). It is advisable to offer multiple languages which can be chosen at the beginning of the activity. The design needs to be visually appealing, but at the same time clearly structured and easy to follow. Furthermore, digital access relates to the different experiences and abilities of visitors regarding technological knowledge. So, some people might understand a digital tool immediately, while others need specific guidance on how to use, for example, a controller. Lastly, the experiences are often constructed explicitly for children; therefore, some of them might

not be appealing to adults. It is possible to offer different variations in difficulty to serve multiple customer groups (Moreno & Mayer, 2007, pp. 319-320).

Moreover, there should be a balance between digital and physical options (Christopoulos & Mystakidis, 2023). Many heritage sites that use interactivity rely too heavily on screens and gadgets, which can be an issue if the technology is not working. The tools must be charged and maintained, and they must have a stable internet connection, which are often still issues for heritage sites to maintain regularly (Christopoulos & Mystakidis, 2023). Additionally, technology should not replace personal contact and interpretation but only complement them. Morally and ethically complex topics are still best discussed through human interaction, and technological experiences might not offer sufficient guidance in complex and emotionally draining topics (Tilden, 2007/1957, pp. 133-134).

Lastly, crowds need to be managed in advance. Often, the interactive tools attract many visitors, and this can lead to queues or clutter, which can cause feelings of frustration and boredom (Christopoulos & Mystakidis, 2023). It can be managed by ensuring enough spots for the interactive experiences, for example, by replacing one big screen with multiple small tablets. Another important thought is to integrate every experience into the entire concept. Interaction should never be isolated. While waiting for their turn, visitors could use the time to look at related exhibits or read about the background (Christopoulos & Mystakidis, 2023).

4. METHODOLOGY AND DATA COLLECTION

This chapter summarises the thesis's methodology, describing the data collection process, data analysis, and ethical considerations.

4.1 Semi-structured interviews

The research is conducted through a qualitative method based on the critical theory paradigm. The critical theory paradigm aims to give a voice to minority and oppressed groups and seeks to change by doing research (Jennings, 2010, pp. 43-45). This research focuses on different (minority) groups, which are often neglected in heritage interpretation. Through my study, I try to present some of their perspectives and experiences and increase the understanding of cognitive inclusivity in heritage interpretation. Therefore, my aim is aligned with the critical theory paradigm. A qualitative research method has been chosen to understand the visitors' points of view regarding learning and engagement with heritage narrations. According to Goodson and Phillimore (2002, p. 5), qualitative research helps to understand human perceptions and experiences in different cultural and societal settings more deeply, which is mainly important in the research field of inclusive tourism. By focusing on the previous experiences and evaluations of diverse visitors, qualitative research can provide more valuable insights into how heritage interpretation can be made more inclusive and engaging. It enables the exploration of more nuanced themes and the understanding of correlations and their reasons. Lastly, it helps understand feelings, emotions, and opinions, which I aim to research further (Goodson & Phillimore, 2002, pp. 5-10).

The selected data collection method is semi-structured interviews, as these provide the opportunity to discuss deeply with visitors about their feelings, perceptions, and experiences regarding heritage interpretation (Smith, 2010, p. 109). This is important for research based on a critical theory paradigm, as the groups that have been neglected in heritage interpretation can share their experiences, opinions, and ideas in this way. Semi-structured interviews are based on a set of questions prepared beforehand, and these questions can be slightly adapted during the interview process if needed (Smith, 2010, p. 109). Semi-structured interviews provide both flexibility and structure. On one hand, they enable adjusting questions to each participant's personality and knowledge during the process. On the other hand, the interviewer can maintain focus due to a set structure compared to open interviews.

Furthermore, semi-structured interviews simplify the analysis process, as similar questions are asked and the answers can be compared more easily (Smith, 2010, p. 109). Lastly, according to Jordan and Gibson (2002, p. 222), this method has high validity as interview questions can be adapted during the process to ensure that the questions are understood, and the answers provide in-depth information. The qualitative data collection method is important for understanding how visitors with diverse educational backgrounds perceive, understand, and experience heritage narrations. Additionally, as interviews are often held face-to-face, body language and mimicry can help the interviewer better understand feelings and emotions (Smith, 2010, p. 109). Lastly, due to the personal connection during an interview, it is easier for the interviewer to develop empathy towards the interviewee, which helps the interviewer understand the studied issue (Jordan & Gibson, 2002, p. 222).

4.2 Data collection process

The data collection process included interview preparations, sampling, and the interview conduction. Firstly, I developed an interview guideline in English and German. These two languages were chosen because the interviews are also in English and German due to my language proficiencies and some interviewees' ability to talk more freely in their mother tongue, German. The interview guideline in English can be found in Appendix 1. It helped me structure the interviews and keep the questions consistent. It consists of five parts: introduction, background information, experiences, evaluation, and conclusion. This interview guideline was essential to provide a sufficient structure during the interview and ensure that the answers can be compared during the analysis phase (Smith, 2010, p. 112).

The introduction provided an overview of myself, my study program, and the thesis topic. Additionally, I prepared brief instructions for the interviewee, which explained how the interview would be conducted. For example, I clarified that they were free to respond openly without feeling pressured to give a particular answer. I also mentioned that breaks could be taken if needed and ensured mutual agreement on the recording process. Lastly, I explained the terms ‘heritage tourism’ and ‘heritage interpretation’ with examples to ensure that each interviewee clearly understood these concepts and to minimise the risk of misunderstandings.

The interview consisted of 27 questions, eight of which were part of the background information. The background information is crucial for the analysis as it shows the differences in learning difficulties and educational backgrounds. The questions aimed at clarifying the participants' school education, English language proficiency, learning difficulties, cultural backgrounds, experiences in travelling and visiting heritage sites, special interests in history and foreign cultures, and learning preferences. These aspects were chosen based on Chapter 2.1.3. The next part included nine questions about personal experiences at heritage sites and with heritage interpretation. The questions aimed to understand interviewees' opinions on positive and negative heritage interpretation practices, what they expect from heritage sites, and their interpretations. Firstly, I asked about their habits of visiting heritage sites. These insights help to analyse the reasons for certain expectations in heritage interpretation. Furthermore, interviewees were questioned about their positive and negative experiences with heritage interpretation, what they tend to learn, and how they deal with English as an interpretation language.

The following part consisted of seven evaluation questions. In each question, I presented an example from a heritage site that represented a cognitively inclusive interpretation practice, which is presented in Chapter 3.4. The topics were plain language and simplification, visualised communication, contextual framing, provoking emotions, storytelling, and interactive experiences. Each example included positive and negative aspects of its interpretation practice. The examples included short texts and/or pictures, videos, and audio and were presented online via screensharing or printed on paper. The interviewee was asked to look at the example as they would at a heritage site and give their opinion about it. It was intentionally a broad and open question, not to limit the interviewees' perspectives. Additionally, I prepared more specific questions for each example, which were asked only if the interviewee did not cover them. The evaluation examples can be found in Appendix 2. It includes paraphrased descriptions of the heritage site materials shown during the interviews. The original texts and visuals are not included to respect copyright limitations and online publication policies. The last part concluded the interview with three questions, asking for specific improvement ideas and the possibility of adding a topic that has not been covered. Lastly, the interviewee was asked if they had any previous knowledge about specific practices that might have influenced their answers.

I chose to conduct a non-probability sampling to ensure that I cover a variety of different learning abilities and educational backgrounds. I paid special attention to possible learning difficulties, cultural backgrounds, English language level, and interest and experiences in heritage tourism. The interview partners were found through social media and my network. The non-probability sampling was chosen due to the importance of covering a wider range and also representing groups who are often neglected and forgotten in heritage interpretation planning (Smith, 2010, p. 91). After sampling, one pilot interview was conducted as an opportunity to test out the interview questions and to practice my interview methods. After the pilot interview, minor changes were made in the interview guidelines. One question in the conclusion part was deleted due to repetition in the answers. One evaluation question was added to the third part after feedback from the pilot interviewee. Despite these small changes, the pilot interview was taken as part of this research in the analysis phase due to the limited rate of changes and their sufficient answers. Additional ad hoc questions compensated for the additional example during the pilot interview.

In total, seven interviews were conducted, five of them online, two of them face-to-face. The online interviews were in German and translated into English; the remaining two were in English. Each interview lasted between 60 and 90 minutes and was recorded via Teams. The recordings were used for transcription and were entirely deleted after the transcription. The recording was agreed upon before the interview, and the agreement was reassured before the recording started. Smith (2010, p. 113) demonstrates that recordings are beneficial for the interview conduction and the analysis, because the interviewer can concentrate on the discussion and not take notes. Furthermore, the interviewer listens to the talk at least twice and can use word-by-word answers for the analysis, promising a more in-depth analysis (Smith, 2010, p. 113).

4.3 Data analysis

The data was analysed through content analysis and a mixture of the inductive and deductive approaches. Firstly, the analysis phase began by organising the data: the interviews were transcribed through the Word transcription tool, and five were translated from German to English. Then I read through each transcript carefully and divided the data into references, while taking initial notes. The notes consisted of my first thoughts, including expectations,

surprises, and ideas. The references included usually one to two questions and their answers, depending on the depth of the question and answer.

According to Mortelmans (2025, p. 13), the analysis process is about dismantling and rebuilding. The dismantling process consists of reducing the amount of data, coding, and categorising it. The rebuilding process consists of connecting and linking the codes to each other, broader themes, and the theoretical background (Mortelmans, 2025, p. 13). Coding is used to create labels for the mentioned references based on their similarities and importance. All codes together are then a codebook (Mortelmans, 2025, pp. 58-61). I created the codes based on my first thoughts, meaning that if the answer adds value to the topic, I highlighted it in colour and summarised it in three to four words through the program Word. Then, I would evaluate if the code was valuable for one of the RQs. If not, the code was deleted. If a new reference had a similar meaning to a previous one, I would add the same code. Many of the code names are based on the theoretical framework, such as “understanding connections”, “too text-based”, and “creating feelings”. Therefore, the analysis is based on the inductive approach, as the codes were created throughout the process, and on the deductive approach, as the code names are closely tied to the previous literature (Mortelmans, 2025, pp. 64-69). According to Mortelmans (2025, pp. 57-60), the process is a constant repetition of reading and labelling. Therefore, I did this process multiple times for each transcript to reduce the amount of data and, on the other hand, to avoid deleting important information. In the end, I created about 200 codes.

The following step, rebuilding, creates clusters and moves away from the original texts’ closely tied codes (Mortelmans, 2025, pp. 57-60). I made a list of codes and clustered them into bigger categories. Then, I created a mind map for each transcript that included different categories. I tried visualising the various hierarchies and relationships between the categories. After creating seven mind maps, I built one combining mind map. There were clearly many similarities between them; therefore, it felt natural to build one mind map that summarises the findings. Afterwards, I created a list with the final themes and their categories. The final themes were challenges in current heritage interpretation, visitor-centric infrastructure, holistic structure and simplification, alternative presentation methods, and interpretive storytelling. The list included which participant mentioned the themes and categories, and in what way they were mentioned. Finally, I began reporting the findings in Chapter 5 by summarising the findings based on the mind map and the final list.

4.4 Ethical and critical considerations

Although interviews are the most suitable data collection method for this research, there are certain risks of errors or failure. Firstly, interviewees' answers might be short due to insecurity about answering. Therefore, I used non-academic language, which can be understood by everybody, as terms used in tourism research might not be known by outsiders (Smith, 2010, pp. 111-112). Furthermore, the questions were simple and easy to understand to ensure that every interviewee had the confidence to answer (Smith, 2010, p. 116). Secondly, interviewers tend to assume answers and might interpret answers accordingly to their assumptions and beliefs. This is especially important to consider when using directive content analysis, as specific codes and concepts might already be expected (Smith, 2010, pp. 112-115). Therefore, I tried to be a careful listener, set my own beliefs and assumptions aside, and make myself aware of personal expectations regarding some of the answers. Lastly, there is a risk of reacting or answering inappropriately, for example, reacting with surprise, negatively, or emotionally (Smith, 2010, p. 116). Especially as talking about difficulties in understanding and learning is challenging for many, it could make the interviewees feel more insecure. Thus, I ensured to react neutrally or possibly engage in case of strong insecurities.

As the topic can be sensitive for some interviewees, it is essential to ensure that they are doing the interview voluntarily and know that they can end it at any time (Jordan & Gibson, 2002, pp. 222-223; Smith, 2010, p. 113). Additionally, all participants signed a letter of consent, which included their agreement to participate voluntarily. It also included information about the recording and the possibility of ending the interview process at any time. Furthermore, the personal data of the interviewees was anonymised. Names and personal information are not mentioned, so it is impossible to determine who the interviewee is based on the published text. The recordings, transcriptions, and letters of consent were stored safely with secure protection and entirely deleted after publication. The research follows the principles for responsible conduct of research dictated by the Finnish Advisory Board on Research TENK.

Artificial Intelligence has been used partly for research purposes in this thesis. The program Grammarly was used for grammar, spelling, and clarity support in all parts of the paper. Furthermore, the program ChatGPT was used for structuring and refining specific text passages. It was mainly used for Chapters 1, 2, and 3. Artificial Intelligence has not been used

for the data analysis process. No sensitive data was given to Artificial Intelligence programs, and the programs were used within the University of Lapland's guidelines on Artificial Intelligence.

5. ANALYSIS AND FINDINGS

This chapter presents the main findings from the data analysis. Firstly, I present the educational background of the interview participants (P1 to P7). Secondly, I highlight the main patterns of different challenges in heritage interpretation. Thirdly, I present the main patterns of inclusive heritage interpretation, including visitor-centric infrastructure, holistic structure and simplification, alternative presentation methods, and interpretive storytelling. Each of these areas is discussed more deeply below.

The educational background, as described in more detail in Chapter 2.3.1, consists of formal education, English language proficiency level, learning difficulties, cultural background, interest in heritage sites, history, and foreign cultures, frequency of visiting heritage sites, and learning preferences. The formal education is evaluated as basic (up to high school graduation), medium (up to a bachelor's degree), or high (more than a bachelor's degree). The English language level was evaluated by the participants themselves as basic, average, good, and proficient. The interest in heritage sites, history, and foreign cultures was also assessed by the participants as low, medium, high, and very high. The frequency of visiting heritage sites is assessed by yearly visits: low (two to four visits), medium (five to ten visits), high (11-23 visits), and very high (more than 24 visits). The learning methods were described by the participants in their own words and are presented here through bullet points. Table 1 shows a summary, in which the columns represent P1 to P7 and the rows represent each area of the educational background.

Table 1. Participants' educational backgrounds.

	P1	P2	P3	P4	P5	P6	P7
Formal education	basic	high	medium	basic	basic	medium	high
English language	average	good	proficient	basic	good	good	proficient
Learning difficulties	no	ADHD (not certified), dyslexia	no	ADHD	ADHD, autism spectrum	ADHD	no
Cultural background	Central Europe	Central Europe	Central Europe	Central Europe	Central Europe	Latin America	Northern Europe
Interests	high	very high	very high	very high	low	high	high
Visiting Frequency	very high	very high	medium	low	low	medium	low
Learning preferences	writing, building own structure	multi-senses, building own structure	calm environment	precise information, colours, writing	learning by doing, enthusiasm	multi-senses, learning by doing	learning by doing, reading, multi-senses

In summary, the participants had a variety of backgrounds and characteristics. There were three participants with basic education, two with medium-level education, and two with high-level education. English language skills ranged from basic (one participant) and average (one participant) to good (three participants) and proficient (two participants). In terms of learning difficulties, four participants reported ADHD; one of them also had autism, and another had dyslexia. Three participants reported no learning difficulties. Most participants (six) had a European background, while one participant came from a Latin American background. Interest in heritage sites ranged from low (one participant) to high (three participants) and very high (three participants). The visiting frequency was low for three participants, medium for two, and very high for two. Lastly, the learning preferences were versatile. However, specific patterns were found in multiple answers. A multi-sensory approach was mentioned by three participants, writing down and building one's structure were each mentioned by two participants, and learning by doing was highlighted by three participants.

When analysing the reasons for visiting heritage sites and their learning outcomes after a visit, it becomes clear that there are similar patterns in the participants' answers. Firstly, all visit heritage sites usually while travelling in their home countries and abroad. Secondly, the main reasons to visit them are interest in the site or presented topic (P1 to P7), enjoyment and relaxation (P1, P2, P3, and P4), and for education (P2, P3, P4, P6, and P7). P1 and P3

also highlighted that they are usually fascinated by the heritage site itself and its historic importance for culture and identity and named that one of their main motives to visit it. On the other hand, P6 and P7 mentioned that visiting heritage sites is part of a common travel experience.

Thirdly, the learning outcomes can be mainly divided into feelings and impressions, as well as special facts and important information. P1 to P5 explained that their primary learning outcomes are connected to the atmosphere of the heritage site related to their feelings and impressions. All participants said they mostly remember the most important information and special facts, details, anecdotes, or funny side stories. P7 highlighted that they usually remember the central concept, which is why it is a heritage site today. Lastly, one of the most essential learning outcomes and reasons for visiting seems to be the possibility of creating their own opinion on the presented topic and comparing the historical situation to their own lives nowadays. P1, P2, P3, P4, and P7 highlighted this multiple times.

5.1 Challenges in heritage interpretation

The challenges and criticisms towards heritage interpretation were similar and repeated among all participants. There are three main areas: difficulties in understanding, difficulties in holding attention, and the heritage sites' facilities. Firstly, difficulties in understanding include complex language, which was mentioned by P1, P2, and P6. Furthermore, all participants agreed that many heritage sites include too much information and too many details, which leads to feeling overwhelmed and stressed. For example, P7 highlighted, when talking about the 9/11 memorial museum in the USA: *"But of course there was like a lot, so much has been written and presented about it over the years, that it was of course like kind of like information overload."* Besides the mentioned information overload, P5 and P7 also emphasised the possibility of emotionally draining topics, such as dark tourism places like the 9/11 memorial museum.

Secondly, P3, P4, P5, P6, and P7 mentioned their difficulties holding their attention while visiting a heritage site. It was mainly related to reading long texts and listening to long audio. P6 said, *"I think you lose the entire attention like you can start hearing it and then at some point you're, excuse me, what?"*. P4 and P6 also noted that their limited interest in history contributed to their disengagement with specific topics and areas. Lastly, every participant

criticised the heritage sites' facilities, which were not explicitly asked about during the interviews. It can be summarised that five participants found some heritage sites too big and connected them with feelings of stress and pressure, as they were concerned about missing important information. This is linked to big crowds at heritage sites, which were assessed negatively by all participants, often mentioned multiple times during the interviews. P4 highlighted, "*I wouldn't go anywhere where too many people are. I need space to breathe, I need calmness, and I need so that nobody comes too close".* Another important aspect mentioned regarding the facilities was the comfort. Some examples were enough bathrooms and cloakrooms, a cafeteria with affordable food, well-ventilated and heated rooms, and sufficient guidance (P1, P4, P6, and P7).

5.2 Visitor-centric infrastructure

Visitor-centric infrastructure combines all matters, including how to make the consumption of heritage interpretation more enjoyable. On one hand, there are the visual features, for example, P1, P3, P4, and P7 highlighted the importance of visually appealing designs, such as graphics and figures. A positive example mentioned was colours and moving elements, such as videos and animations. P1 talked explicitly about the readability of presented materials: *"The figure, well, the white font on blue background is bad. It's difficult to see, I have to go really close to be able to read it. On the other hand, black font on white ground is always good. If it's white, you always have to go very close."*

Another important aspect is the availability of different speed options. This applies to many different forms of heritage interpretation, such as audio, video, tours, and games or quizzes. P2, P3, P4, P5, P6, and P7 agreed they appreciate tailoring their visit to their own speed. Again, this topic was mentioned without being touched on through questions. Except for P6, all of them said they prefer faster options for audio and videos, as they otherwise lose their attention. P2 explained

> *The receptiveness is usually faster with a faster speed. […] So, that could be maybe an option to offer the possibility to adjust the speed. […] Because if you have a slow teacher, you fall asleep and you don't get what he says. Even if it were the most important thing in the world, and that's exactly the idea behind it.*

P6 highlighted that they often need more reading time and feel pressured when others overtake them.

5.3 Holistic structure and simplification

The holistic structure and simplification category includes contextual framing, creating connections, value-added offers, presenting different perspectives and a spectrum, and focused content. P3, P4, and P6 said that giving context about exhibits and explaining the background of the historical events is highly important to understand the topics mentioned. For example, P1 said: *"The first text [in question 20] gives a bit more context to people who have no clue. There is some basic knowledge about the beginning of smartphones. How life was before smartphones."*

P6 highlighted that this context is often missing, which results in difficulties for them in comprehending historical happenings, such as during the interview in question 21 about the Finnish civil war. It was difficult for them to understand certain relationships and technical words, such as counterrevolution. This relates closely to building connections and answering the question "why". All participants agreed at one point during their interviews that it was essential to understand connections and relationships through heritage interpretation. They mentioned especially that these are often missing. P1 said about the same example of the civil war museum:

> *Okay, so the last part is difficult to understand. I had to read it twice. […] The upper part is good, easy to understand, but on the lower part, the connections are not explained well, so that I would understand it properly.*

According to the participants, the reasons and causes for specific events or situations are especially lacking in explanations.

Furthermore, P1, P2, P4, P6, and P7 said that they expect some sort of addition in heritage interpretation, meaning that they don't want to consume only the very obvious facts, which could be studied at home without visiting the site. P1 connected it with their fascination with heritage sites, so they expect that a heritage site is something other than their everyday life due to its beauty, opulence, or atmosphere. This feeling should also be transferred to its interpretation:

> *Well, we went to a church in Italy, […and there were] pleads and they were, I think, over 200 years collected and presented in this room. I think this was so incredibly beautiful. They were mainly thanksgivings. "Thank you, god, that you helped me." And so on. And the room was full of these letters, made really nicely and impressively. This was very impressive and beautiful, that the church offered so much room to the people and not the normal church stuff. (P1)*

Additionally, P2 and P4 explained that they expect some informational addition, meaning that the information should not correspond with the Wikipedia article of the heritage site or the first results on the internet. Lastly, P7 added that *"on quite many occasions, they're [interactive tools] also built for kids"*, meaning that they do not use tools, such as games, quizzes, or demonstrations, because they are initially concepted for children, and therefore, no addition for them. They also highlighted, like P2, that these digital tools need to be concepted differently than something, that could be done with the own phone or computer at home.

Another important aspect seems to be the presentation of different perspectives to create a spectrum, which all participants, except P5, mentioned. The topic was touched on in question 22. P3 answered there:

> *And it [the video presented] is short, but you see so many different people, and different opinions, you can experience different meanings, but they were always together in the picture and at the end they were all together, so you realise, that despite their different opinion, that there is a unity.*

Lastly, P3, P4, P6, and P7 talked about presenting precise information. This topic came up especially when talking about the amount of information presented at heritage sites, and this information is often too detailed and too much to process. For example, P3 said, *"I learn the best through precise information, small texts, but more facts. So, very fact-based, very short and summarised."* Additionally, P4 highlighted that *"sometimes it's also too long, so for example, a guided tour for three hours. There is then almost too much information. So, a short summary is usually enough."*

5.4 Alternative presentation methods

Alternative presentation methods are based on the criticism by the participants due to the number and length of texts in heritage interpretation. The following chapter summarises the ideas and practices of how texts can be reduced, which are visualisation, multi-sensory approach, interaction, and hands-on activities. The highest agreement by all participants, comparing all touched topics, is the importance and positive impact of visualisation, including graphics, figures, maps, and videos/audios to present information. P5 said, *"Yes, I like the figure. Theoretically, I wouldn't even need the text,"* in question 19, in which a figure represented price developments of different products. All participants agreed on the positive impact of the figure and how it clarified the text with specific examples. Most participants also

mentioned the visually appealing graphics. However, P1, P2, P3, and P7 said that they prefer the combination of a short text with the figure.

Furthermore, all of them, except P1, mentioned using multiple senses, besides the visual one. It is essential to highlight that the participants defined visual aids, such as previously discussed graphics and figures, as something different from reading texts, despite both being consumed through the visual sense. For example, P7 said, "*When you can engage with multiple senses somehow. So, to me, it's like positive when you do something physically, maybe touch it, also if you can see colours, you maybe hear some music or voices."* I did not mention the term multi-sensory during the interview. However, many participants mentioned it.

Especially important seems to be the sense of touching, which, according to multiple participants, is often neglected in heritage interpretation. P2 summarised it as follows:

> *We [neurodivergent persons], for example, like those tangible things; that's nothing new, but to touch things, to feel them, to feel surfaces, is just something amazing. If I am in the natural science museum, and I can touch a beaver's fur, then it has more value than if I write a text and tell that the fur has 1000000 hairs per square centimetre.*

The sense of touch was mentioned multiple times by P2, P3, and P7. The other category closely related to the previous one is the possibility of interactions and participation. This practice is as popular as visualisation, as all seven participants evaluated it as something positive and often missing in heritage interpretation. We talked especially frequently about games and quizzes in all kinds of forms. According to P6, it can increase the attention level and serve as a break for their concentration. P1 highlighted that they always try them out, and usually, they increase their enjoyment at heritage sites. However, most participants also criticised interactive tools. For example, P6 said, "*Sometimes I have seen that in museums it stopped working at some point, like there is some technical problem. So, in the end, you're not gonna enjoy it properly."*

Another issue mentioned by P3, P4, P5, P6, and P7 was the long queues in front of some of them, and that they usually do not wait for their turn, but then skip the opportunity. P2, P4, and P7 criticised that many of them are not innovative enough. P2, for example, said

> *If the aim is to teach new knowledge, then we definitely should focus on gamification. It is already used often in natural science museums. For example, the Deutsche Museum [in Munich] or there are also some examples in San Francisco, there are also some really great museums, where you can touch, try out, and so on.*

This leads to the last aspect, hands-on activities. P2, P3, P4, P5, and P7 mentioned their interest in those activities and their desire to be included more often in heritage places. P5 explained during question 23 the following:

> *[While] you have an audio tour, maybe it could help to do something else simultaneously. Specifically, in this case, I thought that you could maybe dig up something. Like a small model of this skeleton, you can do it at the same time they explain it. So, then you could suck in the information and maybe, I don't know put the model somewhere.*

In this regard, it is important to mention that P2, P3, and P5 mentioned the wish for a small souvenir after these activities and connected it with an increased learning outcome.

Finally, P1, P2, and P3 mentioned their need for additional information in heritage interpretation. They said they sometimes miss the opportunity to receive further information about specific topics they are especially interested in. They also made concrete suggestions on how these could be presented, so as not to disturb other visitors. The mentioned examples were QR-codes, leading to a website link with more information, that can be consumed at home; a short summary of the main content and then the possibility to open a drawer, tabloid, or something similar, which then presents more detailed information; and the use of tablets or mobile phones with specific applications, so that visitors can scan certain exhibits to view more information on the screen.

5.5 Interpretive storytelling

This theme is about the idea that the narrative in heritage interpretation is told (through whichever channel) by a story to make it livelier. In practice, this means that narratives are less descriptive and formal but consist of storytelling elements. For example, P5 mentioned that they like imaginative language. While talking about question 20, they specifically said, *"I would say not so formal text, which is solely informative, but it tells a story".* P3 summarised it as follows:

> *So, I like it when it is lively and when it is presented lively, so if it is not static, but there is some sort of dynamic. Because that increases my curiosity. And then the information is transmitted in a different way. So, if it is something new, if it is something dynamic, if it is something different.*

The most important tool of interpretive storytelling is, of course, the language. P6 explained: *"I would say, like this is the type of text that becomes a bit difficult when they are starting to have very technical words."* Technical words in this sense mean vocabulary from the jargon

of history. P2 talked about the importance of short and simple sentences, saying *"there are no clear and short sentences, but multi-clause sentences. […] The first sentence is great, but the second sentence is already almost two and a half lines long."* In general, the complexity of language at many heritage sites has been criticised by P1, P2, P4, and P6.

On the other hand, every participant highlighted at least one of the following good practices in storytelling: comparisons, dialogue, emotions and humour, personal stories, and fun facts. Firstly, comparisons help to explain concepts or numbers which are difficult to imagine. P2 explained:

> *I also like comparisons. […] So, for example, rocket starts, what would you need for an exhibition to Mars? And I calculated it in PS. And how many cars would that be? Or how big is the square, how many football fields?*

P3 emphasised twice, how they like the feeling of a conversation, meaning *"I enjoyed reading it, because I had the feeling, so, that I'm not reading this text wherever it is written, but more like a friend, which is standing next to me, would explain me this information."*

Another vital aspect is personal stories, from people who have lived during the portrayed times. This seems to be important for all participants, as everybody evaluated them positively during the interviews. P7 summarised it as follows:

> *Yeah, like personal stories are quite interesting because they are livelier. Then also I like interesting facts, like when you kind of combine that, like old information, with the stories of the people, for example, who endured that time. So, then you can view the thing from afar and kind of see some things that you might not have been apparent of. […] you might have a bit better view of […] how it was through the lenses and eyes of those people, but then also the bigger picture. So that is quite interesting.*

Furthermore, most participants (P1 to P6) agreed that they like the inclusion or provocation of emotions in heritage interpretation. They believe it can increase their learning outcome and hold their attention longer. P4 highlighted that, while answering question 22,

> *I actually wish that history and culture would be taught this way, so that we can grow closer together and live in peace together. Then maybe facts are not the only way to do so, but an emotional connection to another culture. I […] can compare it to my own life, and I can see the differences immediately. And they are also really normal people, I guess so. That's reality, and I think I'd take a lot out of it for my future and, in general, my life. I have the feeling that I learnt something about people and culture.*

One tool for provoking emotions is humour, which can create excitement, happiness, and curiosity. P1, P3, P4, and P5 liked subtle humour in heritage interpretation and assessed it as

something positive. P3 answered question 20: "*[…] it is funny, it is fun to read, because it works with humour, and you enjoy reading it despite being a bit longer and with more details."*

Lastly, we discussed fun facts in heritage interpretation, meaning short anecdotes, curious details, and knowledge that is related to the exhibit, but often part of a side story. P1, P3, P6, and P7 liked them a lot, specifically. P3 said about them:

> *Everything that is content-wise a bit different but related to the content of the exhibition or the exhibit. But what is just interesting, a nice add-on to the knowledge, because it is fun […]. And it is also not a huge story, but just something nice and small, fun facts, as you said, so something additional. So, something that you don't have to read, but what is interesting to listen to or to watch or whatever. Yes, definitely, it is fun as a visitor.*

6. DISCUSSION

This chapter serves as an interpretation of the research key findings in relation to previous literature. It presents how different heritage interpretation practices contribute to cognitive inclusivity and how they can contribute to learning outcomes and engagement possibilities for a broader range of possible visitors.

6.1 Possible challenges in current heritage interpretation

The interpretation begins with answering RQ2, "Why are individuals facing issues understanding and comprehending information at heritage sites?". The findings highlight three main challenges, which all participants mentioned that they regularly face in heritage interpretation: barriers in comprehension, engagement, and sustained attention.

Barriers in comprehension refer to challenges for visitors to understand and follow the content. This can be related to too much information and too lengthy texts, which correlates with the cognitive load theory (Sweller, 2011, p. 63), and especially to too complex explanations, difficult language, and missing explanations in correlations, which aligns with UDL (Galkiené & Monkevičiené, 2021, pp. 11-12), and the schema theory (Cook, 2006). Tilden (2007/1957, pp. 53-58) highlighted that interpretation is often too scientific and made for a historian, not an "everyday" visitor. This also aligns well with previous studies about current challenges in museums. Multiple studies have shown that museums are made for highly educated and academic visitors, while non-academic visitors are often neglected (Ablett & Dyer, 2010; Burton & Scott, 2007; Dawson, 2014).

Furthermore, barriers in engagement refer to the absence of possibilities to participate actively and interact with heritage interpretation. According to the findings, this barrier might diminish the interest in the presented topics and reduce the learning outcomes. Gomez-Heras et al. (2023, p. 7120) highlighted the importance of engagement and enjoyment to increase learning outcomes, and in addition, Kirchberg and Tröndle (2012, pp. 13-14) showed in their study that emotional and/or cognitive learnings increase visitor satisfaction. It relates closely to the schema theory (Copeland, 2007, pp. 84-86), as missing created connections to prior knowledge can lead to disinterest. Furthermore, UDL explains decreased engagement through the need to present information in multiple means (Galkiené & Monkevičiené, 2021,

pp. 11-12). Lastly, Tilden (2007/1957, p. 53) said that the art of interpretation should provoke curiosity and engagement and should always relate to visitors' interests and previous experiences (Tilden, 2007/1957, pp. 36-43).

Barriers in sustained attention refer to the participants agreeing that many heritage places are too big and include too much information, so they cannot be processed. This can be explained through the cognitive load theory, especially its central idea to reduce the extraneous load (Sweller, 2011, p. 63). Additionally, for processing information, a person's attention needs to be triggered, as the sensory memory filters all sensations and information before processing selected ones (Likourezos, 2021; Sweller, 2011, pp. 42-57). Therefore, if a person's attention is not caught, they might miss important presented information (Likourezos, 2021; Sweller, 2011, pp. 42-57). Similarly, Tilden (2007/1957, pp. 36-43) highlighted that interpretation should focus on the main idea and reduce the information pieces which are unnecessary to understand the historical event. On the other hand, sustained attention refers to overstimulation through too many triggers, such as big crowds, many voices and sounds, and different lights. Although this seems to be usually related to neurodivergent persons, this was evaluated as disturbing and negative by all participants, including non-neurodivergent persons. UDL provides a guideline for creating a calm and consistent learning environment for optimal learning (Galkiené & Monkevičiené, 2021, pp. 11-12).

6.2 Cognitively inclusive practices in heritage interpretation

In this subchapter, I present the main ideas of cognitively inclusive heritage interpretation based on RQ3: "Which heritage interpretation principles are the most appropriate for making heritage interpretation more cognitively inclusive?" Figure 3 shows a mind map with the four areas and their practices. The areas present the fields of heritage interpretation, in which it could improve for cognitive inclusivity, and their practices present specific tools for achieving higher inclusivity. These areas and practices are based on the six practices, which are presented in Chapter 3.4. The six practices were restructured and partly reformulated based on the results of this research and show a more holistic picture for cognitively inclusive heritage interpretation. The arrows demonstrate the correlations and connections between the areas and practices. Each of them is described in detail below.

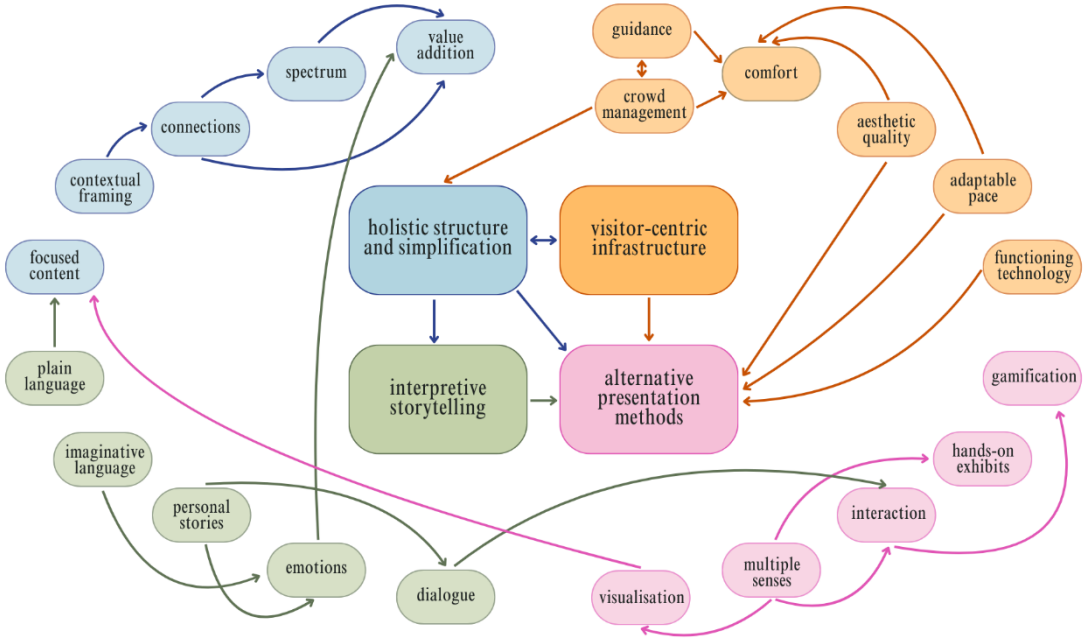

Figure 3. Areas and practices for cognitively inclusive heritage interpretation.

6.2.1 Holistic structure and simplification

The holistic structure and simplification area are central ideas that connect to all other areas and could be seen as the foundation of any narrative and heritage interpretation. The main ideas are simplification of content and providing sufficient background information and context. This mainly addresses the barrier of comprehension. All participants disagreed clearly with many heritage interpretations due to the amount of information provided, the length of the text, and the complexity of the content. Despite focusing on visitors with lower educational backgrounds, the often-missing holistic structure was criticised by all and therefore seems beneficial for all.

Providing a clear structure, a red thread, through the interpretation and narratives, helps to create a logical flow that automatically simplifies the learning process (Copeland, 2006, p. 89; Hems, 2006, p. 199). This aligns well with the schema theory. Moreno and Mayer (2007) have highlighted how structuring information into a logical flow supports building and enhancing schemas. Tilden (2007/1957, pp. 68-75) also explained that heritage interpretation should focus on presenting the core idea of an exhibit, including what it is, why it is presented, and why it is important. Therefore, heritage interpretation should begin with stating

this information; only after that can more detailed content be presented. Usually, understanding the bigger picture is sufficient for most visitors.

Furthermore, contextual framing, including presenting clearly correlations, reasons, and consequences, was demanded by the interviewees from different educational backgrounds. This has two significant benefits. Firstly, visitors can better understand historical events and build a connection to their own lives, which is especially beneficial for visitors with lower educational backgrounds, different cultural backgrounds, and lower interest in history. This practice can also be found in previous research, highlighting the importance of building a connection between the visitor and the told stories (Alshumaimeri, 2023; Tessmer & Richey, 1997). Besides the schema theory, this also correlates well with the worked example effect (cognitive load theory), which explains that problem-solving can be learnt often better through the presentation of known examples (Sweller, 2011, pp. 46-65). When interpretation explains the correlations and reasons of historical events well, the topic can be understood better, and the knowledge can be used to understand similar topics, also today.

Secondly, a holistic structure can add the desired value to the knowledge. Visitors with a higher educational background and high interest in heritage sites especially highlighted their need for added value in heritage interpretation. They explained that heritage interpretation should provide more than simply stating well-known facts. This wish might be fulfilled by presenting a whole picture, understanding reasons and consequences, and the possibility to compare to their own lives. Tilden's second principle (2007/1957, pp. 44-52) also mentions that interpretation needs more than just presentation of facts.

Another essential practice seems to be to provide a spectrum of perspectives. This was again evaluated as positive by all participants, regardless of their educational background. This also has a crucial role in heritage interpretation, in general. Interpreters should aim at representing multiple perspectives and viewpoints, as interpretation is always a reconstruction of history rather than the absolute truth (Ablett & Dyer, 2009; Tilden, 2007/1957, pp. 53-58; pp. 68-75). Doing so not only creates a more comprehensive understanding of historical events but also helps reduce the risk of interpretation being misused for propaganda.

Besides the barrier of comprehension, the area of holistic structure can also reduce barriers in sustained attention. As previously mentioned, the criticised amount of information,

specifically in texts, can reduce the attention and excitement to continue the learning and enjoyment of heritage interpretation. Again, this seems to be common among all participants, leading to the assumption that it is a challenge for many visitors from different backgrounds. This idea can also be found in the cognitive load theory, which aims to reduce the cognitive load, specifically the extraneous load, to prevent cognitive overload (Sweller, 2011, p. 63).

The area has close relationships to all other areas and most practices, as a holistic structure should be present the entire time. These relationships are explained in more detail below. The holistic structure seems to be the most important area in heritage interpretation to make it more inclusive and more beneficial for visitors, as it provides a guideline through the learning process. It can support the learning of visitors with a non-academic background, limited background knowledge in this field, limited or high interest, and different cultural backgrounds. It also helps persons with neurodivergence, as a clear structure can decrease the risk of getting lost or being distracted.

As previously mentioned, the core ideas of cognitive load theory, schema theory, Tilden's second principle, and UDL are represented here. However, the most obvious previous literature is Tilden's fifth principle. He stated already that heritage interpretation should provide a whole picture, meaning that the narrative presents the core historical happenings, their reasons, and consequences (Tilden, 2007/1957, pp. 68-75). This also aligns with presenting a spectrum and simplifying the content through focused content.

6.2.2 Interpretive storytelling

Interpretive storytelling refers to how the content and knowledge are told and how language is used. It has been positively evaluated by all participants. Additionally, the interviewees highlighted that they wished for even more use of storytelling. Firstly, it can lower the barriers in comprehension, as it has a high impact on the language. On one hand, the participants showed tendencies that the language should be simplified through plain language. Reducing technical and academic vocabularies, explaining typically unknown terms, and simple sentence structures could help them focus on the content rather than the language itself. On the other hand, the language could be more explanatory, for example, through imaginative language, such as metaphors and comparisons. Imaginative language usually helps break down complex ideas and topics or put historical events into a modern context (Lucarevschi, 2016,

pp. 36-37). This also relates closely to adding fun facts to the storytelling. This research indicates that most participants appreciate fun facts and even highlighted that those are the easiest to remember. This corresponds closely to the research by Turnšek et al. (2019, p. 116).

The findings relate closely to the cognitive load theory, as simplifying the language reduces extraneous load because known vocabulary does not distract people as unknown vocabulary would (Sweller, 2011, p. 63). Furthermore, it corresponds closely to the principles of UDL developed by CAST (2024) with clear instructions about accessible vocabulary and sentence structures. The interviews showed that plain language has positive effects on a variety of visitors. Some examples are persons with basic English language skills, a basic formal education, persons with lower prior knowledge, and a different cultural background. This follows previous research; for example, Vollenwyder et al. (2018, pp. 520-521) highlighted the positive impacts of plain language on persons with and without learning difficulties.

Secondly, barriers in sustained attention can be reduced through interpretive storytelling. One essential practice that became clear during the research is emotions and feelings. Also, previous literature shows that heritage interpretation can provoke emotions in visitors, which enhances the learning and engagement level (Tyng et al., 2017). Emotions can be evoked through interactive experiences, for example, music in multi-sensory approaches, as well as through personal stories, such as narratives with specific characters and their background, struggles, emotions, and gains (Watson, 2016). These align well with the schema theory. Personal stories are often used to compare it to the learner's own life and therefore create a bridge between the new knowledge and the existing knowledge (Cook, 2006; Hedge, 2022), while also increasing the germane load (cognitive load theory) as critical thinking might be triggered to find those bridges to the visitor's own life (Sweller, 2011, pp. 57-63).

Additionally, they might feel more authentic to visitors and represent the past better. The interviewees highlighted that they are more likely to stay focused, reflect, and internalise the information when they are connected emotionally to a story. However, the analysis showed clearly how crucial it is to approach emotional interpretation responsibly. Particularly, heritage sites connected to dark heritage must be carefully contextualised. Interviewees said that they sometimes feel left alone with those negative emotions, which increases distress and discomfort. Therefore, emotional content should be accompanied by reflections,

explanations, and support. Watson has also highlighted this in his study (2016, pp. 80-82). This could be achieved, for example, through a personal guided tour and clear explanations of how negative events have happened and how they can possibly be prevented in the future, which is closely related to explaining correlations in the holistic structure area.

Provoking emotions also aligns with Tilden's fourth principle, which claims that effective interpretation needs some sort of provocation, which can be achieved through emotions (Tilden, 2007/1957, pp. 59-67). Provoking emotions might have a positive impact on a wide range of visitors, as it usually increases the interest of visitors. People with lower interest profit from emotions, as their attention can get caught and sustained, while people with higher interest profit from them, as it can provide the desired added value. Emotion can give meaning to historical events by connecting them to human experiences (Watson, 2016), which is especially important for visitors with less prior knowledge and background interest.

Thirdly, interpretive storytelling can reduce barriers to engagement. One practical idea that has appeared in the findings is to create a dialogue between the interpreter and the visitor. Participants appreciate the engagement in reflection, questions, and conversations, making them active participants in the learning process. This supports the idea that interpretation should aim to increase critical thinking and engage the visitor personally (Copeland, 2006, pp. 84-88). Creating a dialogue refers again to the increase of germane load through critical thinking (Sweller, 2011, pp. 57-63) and to UDL's central principle of multiple means of action and expression (Galkienė & Monkevičienė, 2021, pp. 13-14).

The interpretive storytelling relates closely to the holistic structure and simplification. A narrative should also follow a logical flow with a clear structure and should provide the needed context and explanations of correlations. Additionally, it has a connection to alternative presentation methods, as storytelling can be implemented through those. Multiple senses can be used to tell a story, which correlates with the modality effect (cognitive load theory) (Sweller, 2011, pp. 68-69), or they can be part of an interactive experience.

In conclusion, interpretive storytelling is an important area of cognitive inclusivity. It can be used to lower all three barriers and challenges, which are often perceived in heritage interpretation, and increase engagement and learning. It can again benefit a wide range of visitor groups, for example, persons with different formal education, lower English language skills,

various interests in history and heritage sites, different educational and cultural backgrounds, and neurodivergent visitors. It aligns especially with Tilden's third and fourth principles, UDL multiple means of representation and expressions, and increase of germane load (cognitive load theory).

6.2.3 Alternative presentation methods

Alternative presentation methods, including visualisation, gamification, hands-on activities, and multi-sensory approaches, play a key role in enhancing cognitive inclusivity. As these methods offer different ways of presenting content, they can also help overcome comprehension, engagement, and sustained attention barriers. While their relevance is often emphasised for neurodivergent visitors and children (Galkienė & Monkevičienė, 2021, pp. 5-6), the findings of this study show that they are appreciated by a possible broader range of visitors. For example, this research indicates that interactive experiences might help visitors with limited prior knowledge by simplifying abstract, complex, and unfamiliar content in a more concrete and engaging way. Significantly important seems to be the option of visualisation, meaning to present content through diagrams, maps, and figures, as this was highly positively evaluated by all participants. This aligns well with the schema theory, as missing prior knowledge usually limits the learning outcomes. However, if learners are supported to build or enlarge schemas through, for example, visualisation, visitors with a limited educational background might have higher learning results (Alabi, 2024, p. 6; Moreno & Mayer, 2007).

Furthermore, interactive experiences like games, quizzes, and hands-on tasks seem important for the participants. Reading tasks are reduced through interaction and these presentation methods are also beneficial for visitors with lower English language skills and non-academic backgrounds. This aligns with the principles of UDL, saying that content should be provided in multiple means of representation (Galkienė & Monkevičienė, 2021, pp. 11-12). Therefore, hands-on experiences and gamification can decrease barriers of comprehension for visitors with different backgrounds.

Moreover, alternative presentation methods might reduce the barriers in engagement and sustained attention. As interaction specifically involves visitors through tasks, challenges, and multiple senses, especially the tactile sense, engagement with interpretation is increased

(Christopoulos & Mystakidis, 2023; Zeybek & Saygı, 2024). This finding has also been present in this study and seems to be especially beneficial for visitors with different learning preferences, such as learning by doing and hands-on experiences. These learning preferences are present throughout most participants regardless of their educational background. This aligns well with UDL (Galkiené & Monkevičiené, 2021, pp. 11-12) and Tilden's third principle, which asks for interpretation to provoke engagement and involvement (Tilden, 2007/1957, pp. 53-58). From the perspective of the cognitive load theory, these methods reduce extraneous load by simplifying complex content through tactile and visual interaction options and increase the germane load by encouraging deeper and active processing of information (Sweller, 2011, pp. 57-63).

Another important sense seems to be the auditory one, as the participants evaluated audio options as positive. This corresponds mainly with the modality effect (cognitive load theory), which explains the possible benefits of using auditory and visual modalities to increase learning outcomes (Sweller, 2011, pp. 68-69). However, in this case, it is important that the information of the two modalities is different. For example, an audio explanation is combined with a table of specific examples corresponding with the told explanation (Sweller, 2011, pp. 68-69). However, this does not align fully with the findings of this research. Most participants highlighted their preference for combinations of reading and audio texts, which are exactly the same. Only one participant explained that they prefer either one. Different perceptions could explain this. While the previous research focused on the highest learning outcomes, the participants highlighted what they prefer in terms of engagement and holding attention.

Lastly, participants describe alternative methods as helpful in maintaining focus and their attention, correlating with the barrier in sustained attention. This seems especially important for visitors with a lower interest in history and historical sites, as interaction can increase the interest. However, it was mentioned equally by all participants, which suggests a demand for interactive experiences among all visitors.

On the other hand, the area of alternative presentation methods complements the other areas and practices, such as interpretive storytelling, meaning how the narrative can be presented, and holistic structure, by breaking down content and knowledge into manageable segments. On the other hand, these methods must be implemented accordingly into the existing holistic

structure to keep a red thread and increase the understanding. However, it is also important to highlight that these methods and options also demand some guidelines for implementation. Therefore, the area of visitor-centric infrastructure is closely tied to it, and the relations are explained below.

In summary, alternative presentation methods can be a valuable asset in addressing all developed barriers in heritage interpretation. They might increase cognitive inclusivity for diverse visitor groups, such as visitors with lower English language skills and lower interest in history. However, it seems significantly important for persons with learning preferences, including the tactile sense and learning by doing. This also aligns well with Tilden's sixth principle, which asks for specific interpretation that is tailored for children (Tilden, 2007/1957, pp. 76-85). The principle can be used to translate it to persons with generally different learning preferences besides reading. Additionally, previous literature on schema theory, cognitive load theory, UDL (multiple means of representation), and Tilden's third principle correspond well.

6.2.4 Visitor-centric infrastructure

Visitor-centric infrastructure plays a crucial role in cognitively inclusive interpretation. It refers to all physical and informational elements that support visitors in navigating, accessing, and understanding content at heritage sites. These include, for example, orientation systems, resting spaces, comfortable facilities, adaptable pacing, supportive staff presence, and accessible tools and materials. Although this infrastructure is often seen as a background element, the findings of this study show that it can directly influence how well visitors benefit from the provided interpretation. There seems also to be an ongoing trend that heritage sites are developing towards more casual places, and the importance of relaxation besides learning is increasing (Falk, 1999). This also became obvious during the analysis, as the majority of participants highlighted that one of their reasons for visiting a heritage site is enjoyment and relaxation.

It can have a significant impact on barriers to sustained attention, as infrastructure that is not visitor-centred can often lead to overstimulation and feelings of distraction or frustration. This is indicated by the participants' answers. One important idea was the guidance for navigation, including clear and sufficient signs. This also relates closely to crowd management.

Despite the assumption that big crowds are usually disturbing for neurodivergent visitors (Christopoulos & Mystakidis, 2023; WHO, 2019), it became relatively obvious in the findings that participants felt openly distracted and overstimulated by too big crowds and too many people at the same time. This could be prevented through crowd management, for example, through guidance and entrance limitations. This seems to be an under-researched topic in heritage interpretation, but due to the emphasis in the interviews, it is an important one.

The other part of this area is how the interpretation should be designed. According to this research's findings, one key factor seems to be the possibility of self-regulating the pace and depth. Visitors seem to differ in how much information they want to consume, how long they can concentrate, and how quickly they absorb new knowledge. Therefore, a heritage site that offers visitors the opportunity to choose their own routes, take breaks, and revisit exhibits could have highly positive impacts on the visitor experience in terms of cognitive inclusivity. For example, benches, visual and tactile signages, maps, and staff can support it. This can be especially important for visitors with learning difficulties and lower sustained attention. However, it is also beneficial for persons with physical limitations and older persons. This idea can also be found in UDL, as it emphasises offering visitors autonomy in how they want to engage with content (Galkiené & Monkevičiené, 2021, pp. 11-12).

Another important aspect of self-adaptable pace is the option to speed up or slow down audio and video. Participants highly requested faster play options, as they lose attention during standard speed options. This was also highlighted by Moreno and Mayer (2007, pp. 319-320) as an important feature in learning. Furthermore, interpretation’s aesthetics are important for inclusivity. Colours, fonts, visually appealing design, high audio quality and similar aspects were mentioned during the interviews and correlate with many interpretation design practices (Cook, 2006, p. 1084; Moreno & Mayer, 2007, pp. 316-320; Tabraham, 2006, pp. 72-74; Tilden, 2007/1957, pp. 89-100). One specific feature is the split-attention effect, which indicates the positive benefits of combining two sources of information swiftly. For example, a graphic includes its description within the picture (Sweller, 2011, p. 66). This also correlates with this research’s findings.

Whenever digital tools are used, they also need to work well. Otherwise, this can decrease the engagement level and lead to frustration (Christopoulos & Mystakidis, 2023), which was

also highlighted in this research. One important insight, that correlates well with research (Tilden, 2007/1957, pp. 133-137), is that interactive experiences, specifically digital ones, should be used with caution and not overtake the interpretation's idea. This also aligns with the transient information effect, which explains that temporary formats can reduce the learning outcomes, as some people need more time to process information than the information is present (Sweller, 2011, pp. 71-72). Previous literature has highlighted that technology should not replace staff at heritage sites, as the personal contact remains important for learning and engagement (Tilden, 2007/1957, pp. 133-137). This has not been found in this research but was also not explicitly covered. It could be part of further research in this field.

In summary, visitor-centric infrastructure seems to be an important element of cognitive inclusivity, which has been evaluated as often missing by the participants of this research. Despite the limited research on this topic, it aligns with learning theories of UDL (Galkiené & Monkevičiené, 2021, pp. 11-12) and in a broader sense of cognitive load theory (Sweller, 2011, p. 63). Additionally, Tilden has highlighted ideas regarding comfort and facilities in his writings (Tilden, 2007/1957, pp. 133-137). Visitor-centric infrastructure could have positive benefits for many diverse visitor groups, as the term already indicates, facilities and design would be adapted to the needs of visitors and could therefore increase the comfort and enjoyment and decrease the risk of overstimulation at a heritage site. This usually leads to more engagement and higher learning outcomes (Hagenauer & Hascher, 2014, pp. 20-30).

6.3 Suggestions for visitors with high levels of educational background

This subchapter answers RQ4 "How can cognitively inclusive heritage interpretation be made interesting enough for visitors with a higher educational background, especially in history?". I analysed this question by specifically evaluating the answers and findings of P1, P2, and P7 based on their educational background. P2 and P7 had the highest formal education in combination with English language skills. P1 and P2 were highly interested in history and culture, and had the highest visiting frequencies.

The background for this research question is the expertise reversal effect, which is part of the cognitive load theory. It explains that learners with high prior knowledge might learn less due to simplification (Sweller, 2011, p. 70). This corresponds partly with the findings from this research. P7 mentioned that interactive tools are often designed for children and

are therefore not appealing to them. However, this seemed only a limitation for interactive tools, and additionally, cognitive inclusivity and design for children cannot be seen as the same approach. Lastly, none of the other participants mentioned being underwhelmed. Therefore, the research indicates that cognitively inclusive heritage interpretation primarily does not exclude visitors with a higher educational background and/or higher interest in the presented topics. Visitors, who are not facing any learning difficulties and/or have relatively high interest and experience in visiting heritage sites, evaluated cognitively inclusive practices similarly to those with those limitations did.

Especially surprising was that the mentioned participants also highlighted the complexity of many heritage interpretations. Additionally, they mentioned that many heritage sites have too much information and too many texts. These aspects seem especially important for persons with a lower educational background; however, this research indicates that persons with a higher educational background might also benefit from adapting these. Two ideas appeared during the research on how to serve persons with a higher background. Firstly, the importance of the added value was specifically present within these three participants. This could be achieved by either provoking emotions or creating the possibility to understand the holistic picture with sufficient background correlations, such as reasons, causes, and consequences (Tilden, 2007/1957, pp. 68-75). Secondly, additional information for specific topics could be added, either digitally or non-digitally, if the topic is presented in a shorter manner. The participants mentioned QR codes, online information, or tabloids (Bath, 2006; pp. 165-166; Tabraham, 2006, p. 75).

7. CONCLUSION

This thesis's aim was to increase the understanding of how cognitively inclusive heritage interpretation can benefit a diverse range of visitors with different educational backgrounds and learning preferences. In this chapter, I present the main insights of the research with the focus on RQ1, the research's contribution, limitations, and possible future research ideas.

7.1 Summary of research findings

RQ1 asked: "How do cognitively inclusive approaches in heritage interpretation benefit various visitors with differences in educational backgrounds and learning preferences?" The findings of this study indicate that cognitively inclusive heritage interpretation can increase the engagement and enjoyment at heritage sites for a broader range of visitors. The participants showed similarities in their positive evaluations and answers about cognitively inclusive practices in heritage interpretation. All participants agreed on similar challenges in many of today's heritage interpretation offerings and had similar wishes and opinions on how it can be improved. Therefore, it can be said that visitors with various learning preferences and educational backgrounds seem to benefit from cognitively inclusive practices to increase their learning and engagement at heritage sites.

One key finding from this research is to create an interpretation for regular visitors. As previous research has shown relatively clear, most of today's heritage interpretation is designed for persons with high educational backgrounds, often even with an academic background. This also corresponds with the findings of this research, as the participants frequently felt overwhelmed by the amount of information. Therefore, heritage interpretation could be made more cognitively inclusive by simplifying complex narratives and providing a clear structure throughout the interpretation. Furthermore, it seems to be essential to support visitors in creating bridges to their own lives and experiences or to today's world.

Additionally, it seems to be essential to serve visitors' different learning preferences. Addressing different senses and including emotions can increase cognitive inclusivity. The tactile sense, in combination with hands-on exhibits and interactive experiences, seems especially important. However, the research also suggests the importance of cautiously implementing interaction and multi-sensory approaches for preventing overstimulation and

maintaining the clear structure. Moreover, heritage sites are, of course, a place for learning and conservation; however, they should also be a place for relaxation. The interviews suggest that visiting a heritage site is part of leisure activities. Therefore, heritage sites could increase their comfort by reducing the risks of overstimulation and increasing the possibilities of adapting the stay to an individual's pace.

Lastly, heritage interpretation is crucial in creating emotional connections and increasing empathy. Both can enhance significantly understanding and learning. When visitors are able to connect with narratives and their meanings presented at a heritage site, they tend to engage more deeply and reflectively. Learning is not only one of the main aims of heritage interpretation but also the primary motivation for most participants when visiting heritage sites. One of the most important findings of this research is the need to create value-added experiences through interpretation. These can be either in the form of emotionally engaging content that provokes empathy or enhanced learning opportunities that lead to a deeper understanding of the historical context and its meaning for today, or even the visitors' own lives. Ultimately, as emphasised throughout this paper, heritage interpretation should preserve the past within the present to shape the future.

While this study has been focusing on possible visitors, the findings also specifically hint at benefits for heritage sites. As a wider group of visitors could be attracted, the number of visitors might increase. Additionally, if people enjoy their stay through the increased learning and engagement, they might be more likely to return and/or visit more heritage sites in general. This thought could be part of further research. Moreover, the findings suggest that not all implications of cognitive inclusivity demand a high budget. For example, consistent structures, visualisation, and audio options are relatively affordable. This is especially important for small heritage sites, which have limited funding and are one of the reasons why heritage sites have challenges in implementing inclusive practices.

The last interesting finding is the correlation between Tilden's principles and cognitively inclusive heritage interpretation. It seems that all developed practices during this research have a relation and correlation to at least one of Tilden's principles, despite being formulated in 1957. Additionally, it can be seen that despite having a different structure, the practices on how to make heritage interpretation more cognitively inclusive correspond with the practices that were developed in the theoretical framework (Chapter 3.4). The six practices

synthesised from previous literature are all present in the four areas and their respective practices. This alignment highlights the theoretical grounding of the findings and shows the importance of cognitive inclusivity. The contribution of this research lies in bridging theory and practice by synthesising the key insights from the cognitive load theory, schema theory, UDL, inclusive tourism, and heritage interpretation, and combining them with my interview-based analysis. Finally, I formulated four areas with respective practices that offer concrete ideas for improving cognitive inclusivity in heritage interpretation.

In summary, this research aimed to understand the benefits of cognitively inclusive practices in heritage interpretation. The findings indicate that cognitively inclusive heritage interpretation can benefit visitors with different educational backgrounds and learning preferences. This aligns well with the idea of inclusive tourism that highlights mutual benefit and the inclusion of marginalised and neglected groups in all touristic activities. Therefore, this research offers a small contribution to highlighting the importance of cognitive inclusivity, specifically in heritage interpretation. As heritage sites aim to educate visitors about history and its significance and meaning today, this educational goal can only be truly fulfilled when learning is accessible and meaningful for everyone.

7.2 Limitations and future research

This thesis has limitations, which must be acknowledged to interpret the findings appropriately. Firstly, the sample size was relatively small. Usually, qualitative research should consist of ten to twenty interviews, which is commonly needed for saturation. In this study, only seven interviews were conducted due to time limitations. This means that the findings should be seen only as indications rather than as representative results. They show tendencies and insights; however, they cannot be generalised beyond their sample. This research could build a starting point for evaluating and researching those practices in more depth and with a larger sample size in future studies.

Secondly, the range of participants could have been broader. Most participants came from European backgrounds, and only one interviewee was from outside Europe. This limits the variety in cultural backgrounds, which is particularly relevant for cognitive inclusivity, as education differs in different cultures. Therefore, future research could benefit from including a more globally diverse participant group, especially from regions which are under-

represented in tourism research. It would also be valuable to consider a broader range of ages, socio-economic backgrounds, and participants with learning impairments. Thirdly, the focus of the interviews was partly limited. The evaluation questions were all from museums and therefore underrepresented other heritage sites. Including a broader range of heritage interpretation and its practices could have enriched the data.

Regarding future research, several areas have emerged during this paper. Each area identified in this research could be studied in greater detail. For example, future studies could research how a story becomes more engaging or which terminology in the field of history is commonly known. The area of visitor-centric infrastructure seems to be under-researched regarding its benefits for cognitive inclusivity. Furthermore, it could be beneficial to study how digital tools can be designed or adapted to increase cognitive inclusivity, as using technology and digital tools is an increasing trend. Lastly, as previously mentioned, live interpretation could be researched further regarding cognitive inclusivity. Live interpretation plays a vital role in increasing understanding and engagement; however, the current state of research is limited. Future research could investigate how to implement inclusive communication for a broader range of visitors.

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APPENDIX 1. INTERVIEW QUESTIONS

Interview Guideline

Introduction:

- Introduce myself (name, university, degree programme)
- Introduce thesis (title and topic, how I came up with it)
    - The aim of the study is to increase the understanding of how cognitively inclusive heritage interpretation can benefit a diverse range of visitors
    - Personal interest in inclusion and heritage interpretation
- Explain guidelines
    - It will take 60-90 minutes, break, termination
    - No right or wrong, tell me your opinion, don't answer, because I expect something
    - Ask me if something is unclear
    - Fully anonymous, no name, no connection to
    - Agree on recording – make a short test
- Explain shortly some terms (heritage and heritage sites with examples, examples of heritage interpretation)
    - Heritage/heritage tourism: all touristic destinations and attractions, that are connected with history. Natural and cultural heritage. Examples: museums, city centres, buildings, monuments, intangible heritage (traditions, live performances, songs etc.)
    - Heritage interpretation: how the historic information is presented at these places, examples are texts, signs, tours, booklets, performances, actors, videos, interactive tools (games, etc.)

Background information:

1. From which school did you graduate?
2. How do you describe your level of English language skills?
3. Do you have any learning difficulties? If yes, which and to what degree (if applicable)?
4. In which country or countries did you grow up?
5. How much do you travel?
6. How do you describe your interest in history and foreign cultures?
7. How often do you visit heritage sites, e.g. museums, city tours, monuments, etc.?
8. Tell me a little bit about your learning preferences. (Follow-up: Are there specific methods you use to learn something new? E.g. reading, listening, doing with your hands)

Experiences at heritage sites:

9. At which occasions do you visit heritage sites? (Follow-up: When do you visit heritage sites?)

10. Why do you visit heritage sites? (Follow-up: For example, during travelling, for entertainment, for learning?)
11. What kind of heritage sites do you visit the most? (Follow-up: For example, museums, exhibitions, city tours)
12. What do you like in heritage interpretation? (Follow-up: Are there certain tools or stories, that you enjoy or that catch your interest?)
13. What do you dislike, or would you like to improve in heritage interpretation?
14. How much or what, do you think, do you learn at heritage sites? (Follow up: Do you remember a specific example of learning something new? For example, a surprising fact or storyline?)
15. Tell me about a time at a heritage site, when you were bored. Why was that so?
16. Tell me about a time at a heritage site, when you were overwhelmed. Maybe a situation, in which you had trouble following the content. Why was that so?
17. How do you deal with when your native language (insert appropriate language) is not available? (Follow-up: How comfortable do you feel in consuming the heritage interpretation in English?)

Evaluation of heritage interpretation practices:

The following questions are based on examples from heritage sites. Some of them are adapted from the original text to fit the purpose. Try to pretend, that you are at a heritage site and are looking at a certain content. Read it or look at it at your normal speed, as you would do it at a heritage site. Don't feel rushed or the need to read it extra carefully!

18. The following text is from the Victoria and Albert Museum in London. It shows a small exhibition room from the Renaissance in Italy. Read the following introduction text to it and tell me your opinion about it. (Follow-up: Are there words, that you don't understand? Is the text easy or difficult to follow? Is the text interesting? Would you read this text at a museum?)
19. This example comes from the GDR museum in Berlin. Read the short introduction and look at the picture. What do you think about the content? (Follow-up: How interesting is it? Is it easy or difficult to understand? What would you improve?)
20. The following texts are from two different museums about an old Nokia mobile phone. Read both texts. What do you think about each text? (Follow-up: Are they easy or difficult to understand? Are there words that you do not understand? Are they interesting? Which one do you prefer, why?)
21. The following text is from the "Tampere 1918 – civil war museum". It's one of the introduction texts into the exhibition. Read the text and tell me your opinion about it. (Follow-up: Is it easy or difficult to understand? Are there words that you do not understand? How important do you think the background information of European history is to understand Finnish history?)
22. The following video is from the Jewish Museum in Berlin. Watch the video and tell me your opinion about it. (How interesting is it? Would you watch it at a museum? Which emotion did it provoke? What new information did you learn?)
23. The following audio and picture are from the Museum für Naturkunde in Berlin. So, a museum about natural sciences. The audio is about the dinosaur T Rex, as shown in the picture. We will listen to it, and you can tell me your opinion about it

afterwards. (Follow-up: Was it interesting? Was it easy or difficult to follow? Did you like the story? Do you like fun facts?)

24. You can see here four pictures. Unfortunately, I can only provide it in pictures, but I hope that you can imagine how it would be in real life. The first picture shows a touchscreen with a map. You can use the map to get more information about certain locations. The next two pictures show a game which you could play at the Louvre Park in Paris. It included questions and instructions throughout the park, with their answers providing knowledge about the park's history. The game was available at different difficulty levels. The last two pictures show an exhibit from the Art and History Museum in Geneva. Visitors can use a tablet to scan ancient, broken statues, and the screen shows them the recovered statue. Look at the pictures and tell me your opinions about these tools. (Follow-up: Do you like them? Which of them do you like the most? What would you do differently? Would you use them at a heritage place? Do you think you would learn something new with the tools?)

Conclusion:

25. When thinking back on the different examples and our conversation, what do you want to highlight? Is there something especially important for you to learn more about or to engage and enjoy a heritage site more?
26. Were some of these examples or topics familiar to you before the interview, meaning that they influenced some of your answers?
27. Is there anything you want to add to the topic that has not been covered yet?

Thanking for participation and stop recording.

APPENDIX 2. EVALUATION QUESTIONS

Question 18
The shown example included an introductory text titled “The Camera” with a painting of a Renaissance room. The text described the appearance of the room and explained its role and significance during the Renaissance period. It was written in plain English, focusing on short sentences. However, it also included some less common vocabulary, such as the word “devotion”. The full text consisted of three paragraphs.

Source: V&A (2013). Gallery text at the V&A. Retrieved December 10, 2024, from https://www.vam.ac.uk/__data/assets/pdf_file/0009/238077/Gallery-Text-at-the-V-and-A-Ten-Point-Guide-Aug-2013.pdf

Question 19
The presented example was an information panel about everyday life in the German Democratic Republic (GDR). It consisted of a short introduction text and a graphic. The text explained how basic necessities were subsidised and inexpensive, while luxury goods were significantly more expensive. The graphic presented four specific examples of price changes between 1975 and 1984. These examples included a television, a bread roll, a car, and rent for a three-person household. The graphic used pictograms to visually represent each example with numbers and short terms.

Source (adapted): DDR Museum (2024). Das “Wohnzimmer” im DDR Museum. Retrieved December 10, 2024, from https://www.ddr-museum.de/de/blog/archive/wohnzimmer

Question 20
The example consisted of two different texts about the Nokia 9210 Communicator, which was the first smartphone. Both texts described what the phone looked like, and which features it had and highlighted the importance of this technological advancement as a smartphone. The first text used humour and imaginary language, but complex sentence structures with multiple slashes. The second text used more formal language and was more factual. The first text had three paragraphs, while the second one had one paragraph.

Source 1 (adapted): Stuff (2016). Hall of fame: Nokia 9210 Communicator. Retrieved December 10, 2024, from https://www.stuff.tv/features/hall-fame-nokia-9210-communicator/
Source 2 (adapted): Design Museo Helsinki (2017). Nokia 9210. Communicator. Retrieved December 10, 2024, from https://collection.designmuseum.fi/fi/item/nokia-9210-communicator

Question 21
The presented example was an introductory text titled “The violent years of Europe”. The text consisted of two paragraphs and aimed at introducing the reader to the beginning of the 20th century in Finland and Europe. It tried to create a background scenery of the turbulent times. It used relatively much historical terminology.

Source (adapted): Tampere 1918 exhibition (2018). The violent years of Europe. Retrieved December 10, 2024, from https://tampere1918.fi/en/tampere-1918-virtual-exhibition/

Question 22
The shown example was a part of a video installation in a museum. The video tried to answer the question “What does it mean to be Jewish?”. The video showed multiple Jewish people answering this question in their own words. There were always two people next to each other, but they were talking to the camera. The answers were very versatile and included different examples and perspectives.

Source: jmberlinTube (2021). Vier Fragen von Yael Reuveny. #2 Was bedeutet jüdisch sein? https://www.youtube.com/watch?v=wTs8klqbSAk&t=1s

Question 23
The example was an audio and a written text about T Rex. The text was a background story about the time when the exhibit, a skull of T Rex, was transported from the US to the museum in Berlin. It included a short tension point, which was then resolved. It was a side story to the actual exhibit. It was longer than the other exhibits, with six paragraphs. It used everyday language.

Source (adapted): Schoder, A. (2025). Wissensdinge: Objekte aus dem Museum für Naturkunde in Berlin. Retrieved January 21, 2025, from https://musermeku.org/wissensdinge-museum-naturkunde-berlin/

Question 24
The example included five pictures with different interactive tools. The pictures are described in Appendix 1.
Source 1: Prodisplay (2024). Museums & Galleries. Retrieved December 10, 2024, from https://prodisplay.com/market-sectors/public/museums-galleries/
Source 2: Beerda, J. (2024). 12 gamification examples transforming the visitor experience in museums. Retrieved December 10, 2024, from https://octalysisgroup.com/2020/04/12-gamification-examples-transforming-the-visitor-experience-in-museums/