Sites for learning and knowledge representations—the Middle Ages

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The Middle Ages in our (European) society

The term “Middle Ages” was defined during the Renaissance. It was seen as the time between the glorious, classical antique societies and the (then) glorious and new, modern era. In Europe, this period is often delimited as the period between the fall of the Western Roman Empire, 476 AD, until the end of the 15th century (with the discovery of America in 1492). However, in Sweden the Middle Ages came later, from the 11th century when the Viking Age ended and Scandinavia was Christianized. It ended at the beginning of the 16th century (when Gustav Vasa, who led the unification of Sweden, was crowned king in 1523).

During the medieval period (until Copernicus’ work on a heliocentric universe was published in 1543), the Earth was seen as the centre of the universe. The idea of *harmony* dominated; heaven and earth, like body and soul, good and evil spirits, as well as visible and invisible phenomena, should be in harmony and balance. It was an ongoing *dualistic* fight between the good forces (God and the angels) and the bad ones (the Devil and the demons). Also, the idea of a *hierarchical order* was central—God was responsible for the world, and the (household) father for the family, and everyone had his or her “natural” place in society. Religion could explain everything in this world, from the development of the planet Earth to angels and devils. A sophisticated system was created for the hierarchy of angels (with three main categories, each of them with three subcategories).

Obviously, we cannot look back at this time as though seeing it from a “time helicopter.” Many other things and ideas which did not exist at that time influence our thinking today. This is also the case with ideas of meritocracy and social travels, the idea that we are not masters in our own house (the psyche, Freud), the idea of economic and class imbalance (Marx), the idea of a (historically seen) very old Earth which was not created during six days, or the idea of a late-modern “liquid” society compared to earlier, more stable and hierarchical societies (Bauman, 2012). Today, we also use network models rather than hierarchical models to illustrate how things (or ideas) are connected

to each other (Lima, 2011). What we see of the Middle Ages today is a rather clean, polished, and romantic picture—a period of time to escape to or to play around with.

The ubiquity of the Middle Ages in our late-modern society

The Middle Ages is used as a frame, a background, or a theme in many modern and late-modern stories and fantasies. We can see this time period represented in books, toys, and games, in popular science, in music, and in films, festivals and re-enactments, and, for example, in museums and monasteries. In these representations, we can notice different “emblematic” or epistemic organizing principles—for example, the Stockholm Medieval Museum (in Swedish: Medeltidsmuseet i Stockholm) has the “town” in focus, whilst the Museum of National Antiquities (in Swedish: Historiska museet i Stockholm) focuses on religion. Likewise, when it concerns toys or films or digital games, we often find the knight and the castle as emblematic, and handicrafts and tournaments as emblematic in contemporary “medieval” festivals, for example. Of course, beside these emblematic representations, we also find different sub-themes of other aspects of life, war, or production during the Middle Ages.

All in all, the Middle Ages is represented in many different ways. Taken together, these knowledge representations offer a variety of aspects of what the Middle Ages “is” about. When children come to school, they already have ideas about the Middle Ages. As a consequence, we can ask how learning outside schools differs from learning in schools, as well as what is seen and recognized as knowledge and signs of learning about the Middle Ages in these different contexts.

As we will show in the following, different formal, semi-formal, and non-formal framings support different kinds of learning resources: for example, toys and games, school textbooks, and digital supportive resources, films, and TV programs, as well as visits to historical places and the making of artefacts. The use of resources is framed by such things as tradition, habit, and knowledge, as well as by timeframes, technological equipment, and standardized procedures to measure knowledge and learning. It seems that in our contemporary hybrid society, there is a growing interest in using, for example, digital artefacts and maker-spaces in the school context, which also will affect ideas about what could be seen as the central knowledge areas within a particular school subject (also see Insulander et al., 2016, 2019; Lindstrand et al., 2016a, 2016b).

Gaming the Middle Ages—examples of designs for learning in non-formal settings

With an estimated 2.7 billion gamers across the world in 2020 (Gough, 2020) and an incessantly multiplying number of streamed gaming sequences, vlog

episodes, comments, and online discussions related to games, video games are an important part of contemporary (media) culture. Since gaming is an activity that for most people is related to free time, away from work or school, and since most of the games people choose to engage in have been designed primarily for purposes other than learning, we will approach them in this chapter as examples of how we think about learning and designs for learning in *non-formal* settings (see Selander, this volume; see also Selander, 2008, 2015, 2017). Our starting point here assumes that learning takes place in all parts of life and that signs of learning (or at least signs of knowing)—in the form of *multimodal knowledge representations*—are produced in all kinds of activities. In the case of video games such knowledge representations are produced by producers of games, who have made numerous choices and selections in their designs of the narrative frame, the game world, game play, and so on; and also by gamers through their ways of approaching various aspects of the games. Since we use representations of the Middle Ages as our thematic frame in this chapter, this section will focus on video games and gaming related to this specific historical period. We will begin by presenting a selection of video games that somehow represent a Medieval world, and we will then elaborate on issues regarding learning in relation to playing one of these games.

Similar to texts in other media (films, books, TV series, podcasts, and so on), there is a big variation in terms of how different games relate to a common theme, such as the Middle Ages in this case. They could, for example, be said to vary in terms of *modality*—the degree of truth claim they make—and what *coding orientation* (e.g., “realism” or “fantasy”)¹ they activate, as there is a range between more fact-based representations of historical events and contexts on the one hand, and more fantasy-based representations that host mythical creatures and magical phenomena on the other. We will here touch upon a few genres and themes among these games, with emphasis on which aspects of *the idea of the Middle Ages* they incorporate. A common feature, despite their individual differences, is that most of the games we mention share a focus on war, battle, and/or other forms of power struggle. Common to them all, in other words, is an idea of the Middle Ages as a site for violence and struggle.

Some examples of games that claim to be historically correct are *Assassin's Creed* (Ubisoft, 2007), with the sequels *Assassin's Creed: Altaïr's Chronicles* (Ubisoft, 2008) and *Assassin's Creed: Bloodlines* (Ubisoft, 2009a). The stories in these games are set in present day USA and during the third crusade in Jerusalem in 1191. The producers claim that the digital representation of Jerusalem, some of the events that take place in the game, and some of the characters, were carefully crafted in accordance with historical documents. The game is categorized within the genres “sneak ‘em up,” or “stealth,” where the world within the game is viewed from the player's character's perspective. A difference from so-called “first-person-shooter-games” is that the emphasis in this type of game is not to confront other players in combat, but to move quietly, save

ammunition, and avoid conflicts. Nevertheless, violence and power struggle are still central features since the player's mission—in the role of an assassin—is to hinder the Temple Knights in their ambition to take control of the world.

Another game that emphasizes the Middle Ages as an arena for war and battle is *Chivalry: Medieval Warfare* (Torn Banner Studios, 2012)—a multiplayer-game in the so-called “hack and slash” genre. The focus here is to control one's character in battles against other players and handle different kinds of weapons in order to defeat the other players.

However, not all games set in medieval environments are as obviously oriented towards fighting and action, even though battle remains a central theme. Several games within this field are categorized as “strategy games,” where the aim is to expand one's province or realm by gradually building up the prerequisites for winning power battles of various kinds. An example of this is the provincial development game *Crusader Kings II* (Paradox Interactive, 2012), where the player needs to develop conditions for maintaining troops in order to expand her or his realm. Apart from political aspects, religion and family relations also play a role in the diplomatic negotiations that take place. Other games, such as *Medieval II: Total War* (Sega, 2006), combine strategic elements with more direct battles where the players control their troops in encounters with other players' armies.

An example of games that offer other possible ways of expanding one's power is *Anno 1404* (Ubisoft, 2009b). The aim of this strategy game is to build an economic empire, which is pursued through initial foundation and development of cities “at home” and subsequently through the colonization of countries abroad.

Finally, a strategy game that is quite different from the others mentioned here is *Banished* (Shining Rock Software, 2014), which does not contain any battles at all. The mission here is instead to build a village from start and to develop the prerequisites for handling difficult circumstances such as starvation and deadly diseases.

All of these games use medieval worlds as context for the narrative and as visual themes in the design of what Bogost (2007) refers to as the “skin” of the game (i.e., the world within the game as it is presented to the player by means of different modes). If we regard them as possible resources for learning, it would be interesting to look more closely at *how* the Middle Ages is represented more specifically. What aspects are made salient thematically and visually/multimodally? What characters are introduced as inhabitants of this world and what are their roles within the game?

It is also of interest to reflect on how the player is *positioned* in relation to these represented worlds. In terms of perspective, we could ask whether the player encounters events and gains information through the limited visual and audial scope of a specific character, or whether the world is presented from above with an overview and instant information about different occurrences happening simultaneously in different regions. Is the role of the player to act

and react to events presented instantaneously, or to plan ahead and use the resources at hand to control future developments? These two stances invite two different forms of information, experiences, and processes, and are related to what Bogost (2007) refers to as the “procedural rhetoric” of the game.

Learning about the Middle Ages

Similar to other forms of engagement in a knowledge domain, such as creative processes of various kinds, we argue that, as a result of the player’s choices, ways of approaching tasks and situations, handling of the controls, and so on, aspects of what happens on the screen while playing a video game can be understood as *performative expressions of knowing*.

To a large extent this knowledge is of course largely related to media-specific capabilities like handling the controls, using available information in different ways within the game, and following (and predicting) the development and dramaturgy of the underlying story as the game proceeds.

Besides these, there are also other aspects of performative expressions of knowing that are more closely connected with specific circumstances within the frames of a game. These can still be argued to be connected to aspects regarding gameplay, but they can also be seen as related to the themes and subject content that the narrative activates.

In *Assassin’s Creed* (Ubisoft, 2007), which is claimed to have been thoroughly designed in accordance with historical documents, the protagonist moves through the city of Jerusalem in the year 1191. The mission is to gather information in order to retrieve certain valuable objects and to kill a number of central characters in order to stop the Temple Knights from gaining the power to rule the world.

With regard to performative expressions of knowing, an interesting aspect is that this game can be described as being interactive. Different scenes in the game change depending on how the player acts. Altaïr can, for example, move through crowds without attracting the attention of the villagers if the player allows him to move carefully, but he attracts attention and hostile guards if acting violently. In a similar way it can be risky to arouse the villagers’ attention by moving in ways that do not correspond to the social and cultural norms of the medieval cities, for example, by climbing walls when others can see. This aspect of the game implies that the gamer can control the gaming experience and thereby also influence the representational aspects of the Middle Ages presented in the game. A greater degree of familiarity with the cultural and social aspects of the contexts presented in the game can imply that the gamer will face fewer problems along the way and vice versa. In that sense the game’s staging of environments and events can be seen as indications that the gamer shows signs of knowing. Interesting in relation to this aspect is that this knowledge is largely corporal, as it has to do with how to move one’s body properly in a certain historical, social, and cultural context. This embodied side of the game

also affords the possibility of exploring the city, and thus inviting perspectives of the city that are unique to each player. Of relevance to learning, and in addition to the performative aspects of playing, the choices brought about through these interactive and embodied functions of the game increase the players' agency.

At a different level, related to our digital time, many gamers chose to stream (i.e., broadcast) their playing live via sites like twitch.tv and/or record their playing for later publication on YouTube. In these situations, the gaming is made public on social media where others can comment, share tricks and hints, ask questions, and so on. These conversations can work as resources for learning, and what is posted can be viewed as expressions of knowing that are related to the subject of history generally and the Middle Ages and medieval local culture specifically. While being non-formal communities, with no shared curricula, it would probably be possible to discern elements that would indicate a certain culture of recognition in terms of who comments, what the comments regard, how the player is positioned through the comments, the tone in discussions, and so on.

The Middle Ages in museums—examples of designs for learning in a semi-formal setting

Our second example takes place within the semi-formal setting of the museum. Museums differ in some respects from the non-formal setting at home. The definition of the site as being semi-formal focuses our attention on the *affordances* (see Lindstrand, this volume) and the conditions for learning, while at the same time attending to the role of the visitors. Using the semi-formal model of Learning Design Sequences, we discuss how framing influences the choice of resources, the design of knowledge representations, and affordances for meaning-making.

In a museum exhibition, knowledge is often *framed* differently when compared to a school textbook (Insulander et al., 2017). In this case, different aspects of the Middle Ages will be emphasized, and different understandings of meaning-making and learning are taken for granted. In comparison with the school (see our third example below), a museum may be described as a place for free-choice learning. Visitors may engage with aspects of the exhibition that they find the most interesting, in an order they decide for themselves, and without the requirement to be assessed afterwards. However, an exhibition has also been deliberately designed. It is the result of choices and arrangements that correspond to the producer's understanding of the particular knowledge area and theme to be displayed. Selections have been made with a particular audience in mind, arranged and adjusted to the conditions of learning. An exhibition has its own organizing principles, which function something like a curriculum.

The semi-formal Learning Design Sequence (see p. 3, this publication) guides our view when we examine the museum space as a design for learning.

The design for learning entails an orchestration of modes and media into *knowledge representations*. The selection of objects and the design of labels and text panels as well as images are examples of learning resources which have been coordinated and arranged by a producer into an exhibition. The purpose may be to disseminate information about a specific era and at the same time arouse visitors' interest. The institutional norms in a museum often include walking slowly and talking quietly. Usually, you cannot touch museum objects, but study or admire them inside a showcase or from a distance.

Designs for learning focus on *design*, with regards to both the organization of the setting and the process where learners make choices and selections—how they *frame* the exhibition, and thereby create their own understanding of the content presented. If we then look at the primary transformation unit—design *in* learning—we observe how visitors engage in an exhibition as they walk through the galleries, transforming and forming signs. The second transformation unit may involve talking about their experience with peers, sharing it with others on social media—or if it's part of a research study—reflecting on their visit to a researcher in an interview.

An example of a museum that produces theme exhibitions with a medieval emphasis is the Stockholm Medieval Museum. It was built in 1986 around the ancient monuments that were unearthed during the excavations of the island Helgeandsholmen in 1878–80. The city wall from the 1530s, a cemetery that belonged to Helgeandshuset, and a secret corridor that ran from the castle to the courthouse are today incorporated in the exhibition space. The museum has a permanent basic exhibition that depicts different parts of medieval Stockholm with a building cabin, a church and monastery, a gallows hill, a square, and so on. Wax dolls and reconstructions as well as different kinds of scenarios are mixed with authentic artefacts in environments that help visitors to feel that they are getting closer to the Middle Ages. The exhibition covers social, cultural, and economic history, and focuses on authenticity and on how historical knowledge is gained. Guided tours are offered by museum educators. The orchestration of modes and resources is used to highlight what is seen as the core element of this particular semiotic context: life in a medieval town, and at the same time, authenticity and reflection on historical knowledge.

A different example is the Kalmar County Museum. The museum arranges “time travels” for children and students who can participate in life in the city, in the castle, or on a farm. There they meet, for example, monks and nuns, get to try out handicrafts, and participate in a medieval feast. Another example of a museum that offers activities related to the Middle Ages is the Sancta Birgitta Monastery Museum in Vadstena, which was originally built in the 13th century as a royal palace, and was fortified in the 14th century. The museum offers guided tours and dramatized hikes. Visitors can try on clothes in the dressing room, and book a children's party with a treasure hunt where they will look for clues: “The Queen's jewel box.” For adults, there is a medieval detective story in the form of “In the Name of the Rose” (after Umberto Eco's novel of the same name). Compared to the Stockholm Medieval Museum, the

orchestration of resources in these two cases is used to create interest and to invite visitors to participate in storytelling.

Another monastery museum is located in Gudhem in Västergötland, between Lake Vänern and Lake Vättern. During the Middle Ages, Gudhem's monastery was an important spiritual, political, and cultural centre. The monastery was damaged by fire and abandoned in 1529, and in 1928 excavations of the monastery ruins began. Today, the museum offers lectures and you can visit the monastery garden or learn to paint icons, for example. Pilgrimages to and from Gudhem are also arranged. In the Stone Hall, which opened in 2008, visitors can see finds from excavations of Gudhem's monastery and scenery from the films about Arn Magnusson, based on Jan Guillou's novels (Guillou, 1998, 1999, 2000). These books are about a fictional crusader whose beloved Cecilia was at Gudhem for 20 years. While presenting facts about the monastery and the role of religion in the medieval society, the orchestration of resources also acknowledges "medievalism" in popular culture. These museums thus support different kinds of learning resources, and in Gudhem we may also notice performative expressions of visitors' knowing, for instance in the museums' guest-book on their website, where visitors have posted images and written messages in Latin. If we compare the museum with the school, what activities, resources, and content are recognized as important?

The Middle Ages in schools—examples of designs for learning in a formal setting

Our third example places emphasis on history in a school context where we use the concepts of agency and cultures of recognition to discuss how the Middle Ages is represented. History as a school subject is *framed* differently from history in a museum. The syllabus strongly determines what should be selected, presented, and taught in each classroom. Even though teachers have a certain degree of agency in terms of what to focus on, they are obliged to follow the curriculum. The Swedish education system is decentralized, but the government sets standardized goals and objectives for Swedish localities to follow. According to the Swedish curriculum for the compulsory school, each subject has an aim and core content which is decisive for classroom work. Assessment also creates conditions for what is to be taught and learned. The knowledge requirements demonstrate what knowledge and skills pupils should develop. So, compared to the museum where visitors can attend to what they find interesting, *interest* in a school context might be more connected with a wish to succeed with the task, to get good grades, or to do what is expected. Thus, cultures of recognition are different in the two institutions.

History as a school subject often requires several linguistic abilities from pupils. These include the ability to critically read and examine different types of sources and texts, to make value judgements, and to compare facts. Thus, textbooks have long been considered of great importance in history education.

Textbooks can be seen as the link between the governing documents and the teachers' teaching, and at the same time as an interface between the curricula and students' learning in school. We will now look at the design and meaning potential of a school textbook as a learning resource. For teachers, as didactic designers, it is essential to be aware of how textbooks represent knowledge in terms of content and modal configuration. Here we will take a closer look at the Book of History 1 (Andersson & Ivansson, 2012). Of the book's 160 pages, just over 50 pages are about "The Middle Ages in Sweden" and "The Middle Ages outside Sweden." It is mentioned that the Middle Ages in Sweden lasted from 1050 to 1520. Various aspects of the Middle Ages are addressed, such as politics, religion, social aspects, and nutrition, as well as fairy tales and legends. "The Middle Ages outside Sweden" deals with the Hanseatic era, how barter developed, coins and banknotes, crusades, cathedral buildings, and Jeanne d'Arc. In this way, the Middle Ages become strikingly "Swedish" in the textbook, although the Hanseatic influence was significant and that, in principle, it was the German language that dominated in Stockholm. We can compare the book's emphasis on the Middle Ages in Sweden with the central content of the syllabus that instead strongly emphasizes the Nordic region and the rest of Europe. The knowledge requirements emphasize cultural encounters, which could justify a clearer focus on this also in the textbook that would help to clarify the purpose and central content of the governing documents. The orchestration of modes is used here to establish norms for the kind of knowledge accepted as such in the school context.

Pupils also need to be able to represent their knowing about the Middle Ages in some kind of narrative. In school, students can represent their understanding in several ways—as *talk* during the lessons and in how they work with tasks of various kinds. Students may transform the information and work with different resources to *write* a story, with a course of events and several personal descriptions. Other tasks may involve the production of multimodal texts that in their layout combine several modes: *font*, *image*, and *colour*. The different tasks will have consequences for assessment, where the teacher can recognize students' selection according to their interest and how pupils compose different units of the text. In the school context, it is seen as essential that the pupil knows how to use some subject-specific concepts in a relevant context. With both tasks, the student is given the opportunity to express interest and choice, but what differs are the resources they are permitted to use.

Concluding remarks

We can see that the Middle Ages—as a knowledge domain—is delimited in different ways in different contexts. It can also be noted that certain themes are unmentioned in all three contexts, like the roles of women and children, or, for example, more profound discussions about the medieval understanding of the world, based on religion as it was then.

In this chapter, we have focused on areas like the non-formal digital game, the semi-formal museum visit, and the formal school setting. These different sites of learning have somewhat different logics concerning knowledge focus, the use of material and semiotic resources, as well as what is valued as knowledge. Let us in Table 7.1 show some of the main differences between institutional framings, material resources, agency, and learning in these three contexts: playing a game, visiting a museum, or learning in a school context.

From our analysis, it seems clear that not only the knowledge focus but also views of what learning is about differ between the three (formal, semi-formal, and non-formal) contexts: They highlight different knowledge foci and different (material and semiotic) resources, they give space for different kinds of agency, and they use different assessment standards. Consequently, these have an impact on how individuals or groups (more or less consciously) design their own action spaces and learning paths in different sites for learning.

There is much to learn about the Middle Ages, but there are also many ways to frame this historical period. In other words, each of the sites focuses on specific aspects for engagement and learning. Those aspects that actually count as learning in the school context depend first and foremost on the curriculum, the existing school traditions, and tools for assessment. This emphasis might lead to certain kinds of relevant knowledge “not being seen” in the school context,

Table 7.1 Learning in non-formal, semi-formal, and formal learning sites.

	<i>Learning in non-formal settings—gaming</i>	<i>Learning in semi-formal settings—museums</i>	<i>Learning formal settings—in schools</i>
Information structure	Architecture of the game	Architecture of the exhibition	Curriculum
Background for activity	Goals and possible actions in the game	Artefacts (real objects) and possible actions in the exhibition room	The teacher’s planning and the assessment; possible actions in the classroom
Activity	The play steers the possibilities	Follow the presentation line	Follow the teacher’s line
Feedback	Instant feedback	No feedback	Postponed feedback
Sites of assessments	The gaming	No testing (sometimes a general evaluation/questionnaire)	The formal assessment
Assessment rationale	Competence to use adequate knowledge (and semiotic resources) in the game context; fun	Experience; have fun	Abstract, formal goals; competence in using the school-relevant (material and semiotic) resources

which compels new questions about possible future learning sites, school contexts, and assessment standards. It might also be possible that we see more collaborative work between schools, museums, game makers, and other interested parties. In our hybrid society, the old brick walls that delimited schoolwork from outside society are no longer absolute borders. Already, we can notice a new engagement from different professionals to take part in schoolwork and developmental projects, we can see a new role for maker-spaces and studios in schoolwork, and so on. All this might also change our understanding of what characterizes non-formal, semi-formal, and formal learning sites.

Our focus on different knowledge representations could also be seen as an attempt to focus on content aspects in a new way, including the role of material and semiotic resources. In a world of multimodal and digitally distributed learning resources, the school textbook is no longer “the heart of serious learning.” We learn in new and interactive ways, not only by reading printed texts. Consequently, individuals can use digitally distributed and open channels to demonstrate their learning and their new knowledge.

Finally, it is our hope that this chapter could also function as a model for the analysis of knowledge representations and learning in other knowledge areas and school subjects. As we see it, learning is first and foremost not an act of reproduction, but of meaning-making and re-design. The design perspective can be used not only for the analysis of how things are framed and what takes place, but also for expanding the thinking on how things could be different.

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