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Turning Access in to Learning

Exploring digital archives and their potential for learning

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Introduction – Gaps and barriers in digital settings

Archives all over the world strive to become accessible by creating online platforms: virtual collections, exhibitions, catalogues, services, and other digital spaces. Generally, online publishing is viewed as a tool for democratization of archival collections – making them, in theory, accessible to everyone.

On a European level the learning potential of digitized collections has long been on the political agenda. In 2002 the EU-commission released the "Digicult Report" highlighting the potential for learning through digital archives. The report concluded that '[e]ducation should become the focus of every digitization policy and a central point in every cultural heritage policy. For example, when selecting material for digitization and producing new cultural heritage resources, memory institutions should follow a multipurpose approach focusing on education. This kind of "education pull" should always be a part of the strategy.'[1]

Notwithstanding this political impetus expressed sixteen years ago, online platforms are in many cases still not developed with education or learning as part of the strategy. According to Tyler and Gibson (2016), technological possibility and quantitative aims, rather than societal need often pave way for development. 'The creators of platforms often overlook the ways they might realize goals that support learning and engagement with cultural heritage; instead, they simply "broadcast" collections'.[2]

Aim

In the following, we argue for the need of archives to target this issue and, in the end, suggest a framework that can help archives and other cultural heritage institutions to reflect upon and broaden the view on online publishing strategies. *The aim of this report is thus to increase understanding on the potential for lifelong learning of archival online resources and suggest methods for diminishing the gap and barriers between archival platforms and the users*.[3]

By learning we mean "a process of active engagement with experience. It is what people do when they want to make sense of the world. It may involve the development or deepening of skills, knowledge,

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understanding, awareness, values, ideas and feelings, or an increase in the capacity to reflect. Effective learning leads to change, development and the desire to learn more." [4]

Previous research in the field will serve as back-drop for our empirical studies. In this case we have made two separate studies with the first including a mapping of existing archival online platforms in the Nordic-Baltic context. Relevant questions connected to the mapping is what the aim with the platforms are, how archival information and online resources are made accessible and to what extent the content is available in terms of membership and ownership. In our second study we let archive users test some of the online platforms covered in our mapping. By connecting with the users we can go more in-depth with the results of the mapping and ask users directly why, from a learning perspective, some online platforms work and others do not.

Background

The archives and the users

Libraries and museums have focused on their users for decades and user studies were undertaken long before archivists started to engage in this field. For a change to occur, the archives had to extend their focus beyond the collections. Citing the Canadian archivist Tim Ericson who in 1990, as one of the first, urged archivists to change focus from themselves and the collections to the dissemination of archival collections to the world: "Archivists have become preoccupied with our own gardens, and too little aware of the larger historical and social landscape around us [...] As a result, the promotion and use of archives for current users is far from what it could be."[5]

Ericson's article appeared in a thematic issue of the Canadian journal *Archivaria*, entitled *Public Programs in Archives*. Another contributor to the same issue was the archives theoretician, Terry Cook, who wrote under the heading "Viewing the World Upside-Down". The goal, for both Ericson and Cook, was to increase awareness of the use of and access to archival collections by the public. Their writings contested the traditional positivist view of the neutral archive and the guardian archivist. At the time it was nothing less than a revolution.

The first articles about user behaviour and user needs in archives appeared a few years later. In particular one article by Wendy Duff and Catherine Johnson started, in 2002, a debate in archival journals in the UK and the US.[6] One side in this debate argued that the archives should make an effort to meet the public on their level and improve the reference service, while the other meant that users rather should be re-educated in order to understand the way archives were structured.[7]

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[4] Dodd, Jocelyn et al (2005) *Engaging Archives with Inspiring Learning for All. A report prepared for MLA North West*. RCMG, Leicester

[5] Ericsson, Tim (1990) 'Preoccupied with our own gardens': Outreach and Archivists, *Archiviaria* 3, p 115

[6] Taylor. Joel & Laura Kate Gibson (2016) Digitisation, digital interaction and social media: embedded barriers to democratic heritage, International Journal of Heritage Studies, DOI: 10.1080/13527258.2016.1171245

[7] A good summary of the debate and the user studies is found in Pugh, Joseph Jonathan (2017) *Information journeys in digital archives*, University of York Computer Science, phD, September 2017, p 75-82
http://etheses.whiterose.ac.uk/id/eprint/20663

Simultaneously, the digital development was embraced by the archives and the Internet was quickly interpreted as a way to broaden access to the collections, but in most cases without specific reference or thought on users and usability. However, as online catalogues were created, voices in the UK and the US were raised in warning for the archives to repeat and transfer the same old-fashioned public services into the digital spaces.[8]

Another contributor to the debate was Elizabeth Yakel, an American researcher who made user surveys on users searching in web based archives for the purpose of academic projects, genealogy, work etc. In the article "Listening to users" which is based on these surveys, Yakel concluded that there were missing reference points between users and archives, a gap.[9] Yakel pointed out that it is important that archivists put words on what it means to search in an archive and that the best way to communicate this to the user is through teaching, textual communication and personal guidance.[10] This communication gap between the users and the archives is where our project focuses. A difference however is that our focus in not on how to teach users about archives, but about how the digital archive platforms can provide learning to users.

In the Nordic setting, Norway is the country where these issues have been discussed with the most intensity. Thus, while Duff and Johnson in the early 2000s wrote their influential article a debate started, involving the director-general of the Norwegian national archives, John Herstad, on one side and the former director of a national body for ALM-development, Gudmund Valderhaug together with a number of Norwegian archivists, on the other (started in Bok og Bibliotek 7/8 2003). In the debate, archival outreach, pedagogics and the relation to storytelling was seen as problematic by Herstad who subscribed to a theoretical approach based on system-theory (Jenkinson) and to a positivist view of history (Ranke). According to him, the archives, by leaving their traditional role as neutral institutions subsequently lost confidence among society.[11] The other side of this debate supported a society-oriented archival theory. They argued that if the archive was to act as a society-oriented institution for everyone, one inevitably had to interpret, construct context and stories. Many archive professionals tended to take sides with Herstad agreeing that the archives should provide access to archives through the historians and other researchers; which could then take upon themselves to communicate the archives to the rest of the world.

A life-long and broad-based view on learning

The Norwegian discussion took place fifteen years ago. Although attitudes in general have become more favourable towards archival outreach and pedagogics, the role of the archives in relation to learning is still complicated. It is not uncommon that the only type of learning acknowledged are activities such as information on how to search a database, find a source, decipher old handwriting etc. In other words, learning to master the obstacles for understanding what one has at hand.[12]

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[8] Pugh (2018) p. 78

[9] Yakel, Elizabeth (2002) Listening to Users, *Archival Issues* (26/2), 2002:114.

[10] Yakel Elizabeth and Torres Deborah (2003) AI: Archival Intelligence and User Expertise. The American Archivist: Spring/Summer 2003, Vol. 66, No. 1, pp. 51-78

[11] Erichsen Chris (2003) Arkivene ville blitt utilgjengelige kaos, *Bok og bibliotek*, 2003, Nr 7/8

[12] See for example Dodd et al (2005)

In this paper we take the stance for a broad-based view on learning in, about and through the archives. As suggested in the definition of learning presented earlier in this paper, the archives can be understood as indefinite sources of learning that can help people make sense of the world. The learning made possible in these kind of settings is not just about archives or about history but learning as in the deepening of any kind of skills, knowledge, understanding, awareness, values, ideas and feelings, or an increase in the capacity to reflect.[13]

It is however not always easy to spot learning for professionals who are not used to think about their role in these terms. At least this is the conclusion of research done at archives in Britain by researchers from University of Leicester in 2005. In this study, researchers also noted a tendency in the archive sector to equate "learning" with schools and not so much with learning in the adult years.[14] The focus of this paper is foremost on adult learners though we will also give examples of digital platforms targeting schoolchildren.

The field of adult or lifelong learning is a growing field of research. Lifelong learning represents a holistic view of education and recognise learning from different perspectives. The concept can be described with the help of a two-dimensional framework with the lifelong dimension representing what the individual learns throughout the whole life-span. Knowledge rapidly becomes obsolete and it is necessary for the individual to update knowledge and competences in continuous processes of learning. The *life wide* dimension refers to the fact that learning takes place in a variety of different environments and situations, and is not only confined to the formal educational system. Life wide learning covers formal, non-formal and informal learning. The formal educational system in child care, compulsory school and upper secondary school lay the foundations with reading, writing and counting as fundamental tools for realising lifelong learning. The ability to communicate in different languages, use information and communications technology are also fundamental as are other dependent factors like the individual's desires, motivation and attitudes to education and learning. Learning about and through the archives can be part of the formal educational setting of a school or an institution for higher education when they chose to cooperate with or use the resources of the archives.[15]

Non-formal education is organised education outside the formal educational system. Many archives are active in this field providing learning in organised form for people of all ages. Here the archives are free to set their own agenda as opposed being part of the formal education where the archives work "on commission" towards a specific curriculum. Informal learning lacks a clear educational situation, it takes place outside organised, explicit education, it takes place in the world of societies, in the family and everyday reality. Also in this type of setting, archives and archival materials play an important role in the lifelong learning of their communities.[16]

Since the concept of lifelong learning was introduced in the 1960s, one part of the debate has centred on the individual's responsibility for taking advantage of the opportunities for learning. Some have also criticised the concept for putting too much responsibility on the individual learner, making it not so much an opportunity as an ideal we as responsible citizens are expected to fulfil and abide to in

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[13] Dodd et al (2005)
[14] Ibid s. 33
[15] Ekholm, Mats & Härd, Sverker (2000) *Lifelong learning and Lifewide learning.*, Stockholm
[16] Ibid

order to conform.[17] Many countries, like Australia, Denmark, Finland, UK and Estonia have also drawn up national policy documents for lifelong learning.

Still it is evident that lifelong learning often is a reality for a small group of highly educated people who continue to educate themselves and have access to learning environments at their workplaces and in other contexts. Lifelong learning should not be limited to a small elitist group, instead the goal must be that lifelong learning and life wide learning shall encompass everyone.

Archives and learning

The archives always have been closely connected to the academia and have often highlighted their role as a service partner to the academic researchers. One could thus say that adults, in some aspect, have always been the target group of the archives. It is only recently however that they have actually started to be perceived as "learners" and that archival institutions have taken on an active role as providers of opportunities for lifelong learning. For archives that have bestowed upon themselves this role the main focus has often been to reach out to a wider audience rather than to the traditional, highly educated, user of the archives.

In the latest decades, archival learning has emerged as a new field with new methodologies and professionals that meet users in all stages of life and situations. Still however, continuing education for the staff to meet the demands of this growing field, is sparse as was noted for the British context already in 2005 by Dodd et al "There are a limited number of courses for training archive staff in the country. Archival training seems to be almost exclusively focused on the systems of the archive, that is, the collection and cataloguing functions of archive staff "[18]

Archivist and archive learning officers work side by side but under somewhat different conditions.[19] The work of the archivist departs from the collection with organization, preservation and providing access as some of the main tasks. The work of an archive learning officer depends on the collections but the starting point is usually a specific audiences or community. An archive learning officer would begin a process by trying to pinpoint how and what a specific target group want to learn through the archives. With this specific learning agenda in mind, the archive learning officer will then select suitable materials upon which to build a programme or asset. To find materials that can *trigger the interest* and *facilitate learning* of the group is an important part of this work.[20] (In many archives there are no learning officers, instead archivists work in the role of learning officers. In the following we refer to both these categories when the term learning officer is mentioned).

Archive learning officers and archivists facilitate learning in different ways. Archivists by responding to enquiries from visitors, in the reading rooms, over the phone and on the web. It is hard, not to say impossible, for an archivist to predict what kind of questions will arise in a reading room or in the home of the digital archive user. A high degree of flexibility in terms of readiness to answer to any

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[17] See for example Matheson, David & Matheson, Cathrine (1996) Lifelong learning and Lifelong Education: a critique, *Research in Post-Compulsory Education*, Vol. 1, No. 2, 199

[18] Dodd et al (2005) s. 39

[20] The discussion on outreach by archivists and archive learning officers is based on Grut,Sara & Press, Maria (2015) 'Active encouragement of accessing archives:a prerequisite for democracy', *Comma*, 2015(2), pp. 21–26. https://online.liverpooluniversitypress.co.uk/toc/coma/2015/2 and on Tegnhed, Eva (2018) Arkiv är till för att användas, *Enskilda arkiv*, red Hagström, Ketola, p. 158-160

kind of questions that users might have, is required. Access is often provided on demand to users with very varying levels of prior knowledge, both when it comes to accessing information and content-specific information. Some users will articulate in detail what they need while others do not know what they are looking for but are curious about a theme or the archives and what one might find there. Archivists communicate with the public in a broad sense and in doing so, activate learning processes that have not yet not been toughly understood or investigated.[21]

As previously mentioned, the archives' connection to academia is often strong, which has created a group of users that are familiar with archival institutions as such and know fairly well what to expect from them. Archive learning officers however, often meet individuals and groups with limited or no prior knowledge of what archival institutions are and how they function. It is thus important to make the first encounter with the archives a positive experience. Most of the work done by archive learning officers is planned in advance and groups or individuals come for pre-booked sessions. Archive learning officers also work out in the community, providing programmes for schools, workplaces or reminiscence sessions at nursing homes. They work strategically to widen the audiences of the archives, engage non-visitors or vulnerable groups, on-line and in "real life". The participatory, or social aspect of the work of the archive learning officer is important.[22]

If the archivist has to be ready for the unexpected, the work of the archive learning officer is somewhat easier to systematize and plan strategically. Archivists usually facilitate learning about archives – specific content, how are catalogues and databases structured, what type of information can I expect to find where? Archive learning officers strategically promote learning in a broad sense and not only about archives but to increase empathy, creativity, inspiration and develop skills like reflexivity, critical thinking, or source criticism. They also promote archival institutions as resources for exploration, wellbeing, social stability and social cohesion. This is not to say archivists cannot pursue the same agenda, although in their daily work it is perhaps not the main concern.[23]

Identifying gaps and barriers in digital settings

According to researchers like Elizabeth Yakel (2002), Joel Taylor and Laura Kate Gibson (2016) and Joseph Jonathan Pugh (2017) there are obstacles between users and archives in the digital setting. In our user studies we will try to understand how competences and strategies used by archivists and archival learning officers can be translated from the real life situations to digital encounters to overcome different kinds of gaps and barriers. From previous studies we acknowledge that there are two types of users of the archives, one group driven by curiosity and one more goal-oriented. To reach out to these groups, different approaches will be needed. To trigger interest will be important on one hand, to facilitate or reinforce learning on the other. These two broad categories of learner incentives will in the following be used as a form of analytical framework for our study.

Inspired by previous research on heritage learning, done by Leicester University, we will also ask the users to self-evaluate their learning experience after having tested some of the platforms mapped in our study. We will focus on learning outcomes such as knowledge and skills but also on unexpected learning, life-impact and on progression over time.

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[21] Ibid
[22] Ibid
[23] Ibid

The archives have opened the door towards outreach and lifelong learning but how does archival learning methodology translate itself into to the digital world? This question will be dealt with in the following.

To make the cultural heritage more widely accessible, digitization of archival sources started on large scale in the 1990s. "Archives for everybody" was the catchphrase of the time and 2009, chair of International Council of Archives, Ian Wilson, concluded that the archives had gone from being the least available (compared to museums and libraries) to the most accessible.[24] The largescale digitization movement had come to be been regarded as an important part of the democratization of the archives.

As a reaction to this digitization-as-democratization paradigm, Joel Tyler and Laura Kate Gibson in 2016 raised the question of how democratic the digitization of archival sources actually is. In their mind there was very little literature and critique on the relationship between democratization and digitization. They claimed that cultural heritage strategies and debates focused on reaching out to large numbers of people with large amounts of digitized items, rather than focusing of how the content is selected, mediated, and communicated. They even warned that certain digitization activities subtly could reinforce non-democratic structures and as mentioned in the beginning of this paper, they view digital initiatives in the cultural heritage sector as "overtly driven by technological possibility, rather than societal need."[25]

As of yet, few studies have analysed the archives' digital platforms and their democratic outcomes, as Tyler and Gibson suggests. Nor are there many recent studies analysing the digital platforms of the archives from a user perspective. However, there are exceptions. In 2017 the British computer scientist Joseph Jonathan Pugh published his thesis *Information journeys in digital archives* in which he analyses *Discovery*, the national digital archive catalogue, run by the National Archives in London. Pugh's analysis departs from a user perspective and he attempts to understand both what the users need and the pedagogical challenges faced by archivists' when trying to help them.

His method is to observe users in the National Archives reading room. Analysing the observations, Pugh uses theories from information science to identify the gaps (barriers) between the users' abilities/competences and the design of the online archival systems. According to his findings, archivists' stationed in the reading room do not answer questions, (as compared to, for example, librarians). Instead they help the users to understand how they, independently, can progress their research journey to the next stage. Pugh concludes that this has implications for system design – "a need for systems operating within a 'teaching' interaction framework rather than merely a 'searching' (or even a 'string matching') one." He continues to claim that this "requires a fundamental repositioning of archival service provision online because very few such tools have these outcomes in mind."[26]

In the following we will use Pugh's conclusions but also take them a step forward by analysing different types of digital platforms and suggesting ways of improving them. We will also suggest different trends in web design that could help eliminate or diminish, gaps and barriers.

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[24] Wilson, Ian (2009) Opening speech at Nordic Archives Day, Trondheim, Norway.

[25] Taylor & Gibson (2016)

[26] Pugh (2017) p. 131

Mapping

Mapping methodology

There is currently no overview and comparison of archival digital platforms in the Nordic-Baltic area. To deepen our knowledge and common understanding of the field we thus performed a mapping that includes 48 archival online resources in Estonia, Sweden, Norway, Denmark and Iceland. It has not been possible to map all sites produced by the archives in the national contexts respectively. A great number of small archival institutions have produced catalogues and learning sites online, many of which are overlapping in terms of design and function. In cases like these we have chosen one example that represents several others in what can be regarded as a wider category of platforms. A majority of the sites investigated were produced by archival institutions, but there are also examples of sites created by others; institutions, individuals, projects, or genealogical organisations.

The mapping was complicated by the fact that our study has not been performed on a full-time basis but stretched out over three years' time. In the rapidly changing world of websites, some platforms mapped in the beginning of our study, due to changes in design and functions, later had to be remapped. Equally important to bear in mind is that the platforms studied were created with different aims and during different decades. After the web 2.0 revolution around the year 2000, some of the old platforms were transformed to include possibilities for chatting and other forms for communication. In addition, many archives started using social media platforms to communicate with the users. This mapping does not include the archives' use of social media platforms as this is a huge field in its own.

Since the Internet entered the daily life of the archives there have appeared different type of platforms that makes archival sources accessible. Categories of platforms that we expected to find include for example online catalogues, reading rooms online with scanned and/or transcribed archives, online exhibitions, learning platforms for schools, platforms for open data and platforms for crowdsourcing and co-production. As we now turn to the result of the mapping it is important to call to mind that approaches, functions, and designs that in different ways support learning are key.

Results of the mapping

In the mapping, the main purpose for which the platforms were created is our point of reference. Hereby, four broad categories of online platforms were identified.

1. Orientation
Includes platforms with digitized catalogues that give an overview of the content of the archives' collections. Efficient use of this kind of platform normally requires prior knowledge of how the collections of an archive are structured. Some of these types of platforms are also presenting links to digitized sources, but the main purpose is still orientation about the collections. Examples are NAD in Sweden and Arkivdk in Denmark.
2. Access
Includes platforms where digitized sources are made accessible. This is the digital equivalent of the physical archive and the most common type of digital platform found in our mapping. This result reflects how the traditional tasks of the archives of making collections accessible in the reading rooms, in many cases, are simply transferred to the digital setting. As in the case with *Orientation*, this platform also requires the user to have some prior knowledge of archives or

archival sources. Examples are Digitalarkivet.no in Norway, Manntal.is in Iceland and Saaga in Estonia.

3. Teaching

Includes platforms where sources are selected and put into a learning framework intended for teachers and pupils to promote learning about and through archives. This category does not necessarily require the user to have prior knowledge. Examples are Stockholmskällan in Sweden, Skólavefur in Iceland and the learning sites of the National Archives of Denmark.

4. Participation

Includes platforms meant to engage the users in different ways, exchange and upload pieces of information. Often this type of platforms are produced by or in collaboration with external actors. Examples are Kbhbilleder in Denmark, Topoteque and Ajapaik in Estonia.

Below is a list of all the platforms included in our mapping. Some platforms will be studied more in-depth in our user surveys. Those are marked with yellow.

Orientation	Access		Teaching	Participation
NAD (S)	SVAR (S)	Copenhagen police records (DK)	Forum för levande historia (S)	Geneanet (Int)
Arkivportalen (NO)	Arkiv Digital (S)	Maps Denmark (DK)	Stockholmskällan (S)	Topotheque (E)
Skjalaskrar.skjalasafn.is (IS)	Jarðavefur (IS)	The digital Emigration Archives (DK)	Skólavefur (IS)	World war 1 (E)
Einkaskjalasafn.is (IS)	Dómabókagrunnur (IS)	Emigration through Vejle (DK)	NDLA (N)	Ajapaik (E)
Daisy (DK)	Tunakort (IS)	Danmark på film (DK)	Företagskällan (S)	Danmark på film (DK)
Arkiv dk (DK)	Manntal.is (IS)	Digitalarkivet.no (N)	Möt källorna (S)	Kbhbilleder (DK)
Starbas dk (DK)	Salnaregistur (IS)	Arkivalier online (DK)	National Archives of Denmark - undervisning (education) (DK)	Danmark set fra luften (DK)
	Heimild.is (IS)	Danish Demographic database (DK)		Digital Bee (E)
	Maps Estonia (E)	Aalborg City archives (DK)		Rötter.se (S)
	Saaga (E)	Films Estonia (E)		
	Fotis (E)	Kirmus (E)		
	Kivike (E)	Kreutzwaldi Sajand (E)		

User survey methodology

Evaluating the learning design

Learning strategies used in archives by both archivists and archive learning officers are fundamental to our user studies. Learning officers often work with groups lacking previous knowledge about archives. Therefore, they try to trigger curiosity and interest and give a first positive experience of the archives. Further, the learning officers often try to inspire users to engage in and co-produce with the archives.[27]

An archivist working in the reference service try to help people understand how to use the archives and to improve their research skills. They need to adjust to the needs of the specific user as experienced users, like academics and many family historians require little help compared to beginners or those just interested in archives in general.

To understand the differences between the user groups, where some users are more curiosity-driven and some more goal-oriented, we have thus investigated how well the platforms met the needs of users with different learning incentives, by direct questions in line with the scheme below.

Trigger curiosity

- Does the platform catch the users' attention?
- Does the platform give the user a first positive experience?
- Does the platform help the user figure out what he/she is looking for?

Facilitate learning

- Can the user connect to or identify with the content on the platform?
- Does the platform make the user want to learn more, go further?
- Are the materials on the platform easy to understand, compare, contextualise?
- Does the platform help the user interact with or share things with others?
- Does the platform allow for user creativity and/or production of content?

In this study we will try to analyse why some design elements proved to be successful from a learning perspective. Here we will also point to other research results in the field.

Evaluating usability

The questions above, which we use to evaluate the learning design, are closely connected to the usability of the platforms. "Usability" is a concept often used in informatics. It refers to the degree in which an object, in a special context of use, can be handled by users to achieve their purpose with effectiveness, efficiency, and satisfaction. Usability can in short be described as a quality attribute that assesses how easy user interfaces are to use. The concept is part of the broader term "user experience".

In our study we have applied methods and questions used within the area of usability studies. In particular, our understanding departs from Nielsen (2012) and two of his five quality components: learnability and satisfaction. The first, learnability, concerns how hard or easy it is for users to

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[27] Tegnhed (2018) p. 158-168.

accomplish basic tasks when they use the artefact for the first time. The second, satisfaction, concerns the degree of satisfaction when using the artefact/design.[28]

According to Nielsen five is the ideal number of test users in a usability study. Even with more participants, five test users will generally find almost every usability problem. A majority of the platforms selected for the user survey will thus be tested by five participants. Further, the selection was done based on criteria regarding age, gender, archival experience, and IT-competence. The goal was to achieve representability in the sample. The test users represent all countries covered in our study, Estonia, Sweden, Norway, Denmark and Iceland. They are not representative in regard to each platform and country but are so taken together as a whole. The test users were also asked to evaluate their digital skills and competences. They placed themselves on the scale from beginner to very experienced.

We put together an interview guide and used semi-structured interviews to connect with the users in the different countries respectively. The guide opens up for the interviewees to discuss and enrich the interview in their own way. According to Nielsen (2012), the "think aloud" approach is "the most valuable usability engineering method". The test users were therefore encouraged to express their thoughts and actions when testing the platform.

What people say and what people do does not always go hand in hand. Our test user sometimes stated that they found a platform easy to navigate and informative in regard to what one could expect to find there. Notwithstanding, we soon discovered that the test users had not noticed all the functions and possibilities within the platform. The situation illustrates a classic problem in user studies: the difference in what respondents say they experience in regard to a platform and their behavior in practice. This has to be accounted for when evaluating the results of all user studies.

Evaluating the learning potential

We also have a set of questions in our survey that aim to establish what the users felt that they had learnt by using the platforms. We asked questions like: Which skills and what knowledge do you feel that you developed/improved by using the platform? Did you learn anything that you had not expected to learn, by using the platform? In that case what? This part of the study tries to give a hint of the potential for learning that lies within the digitized archives.
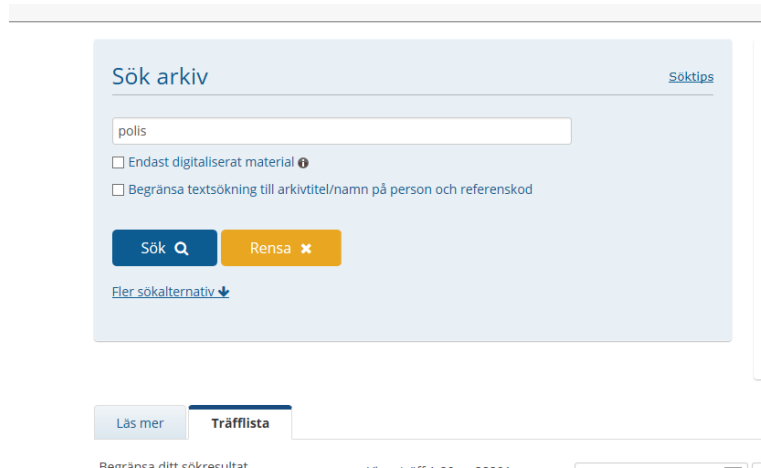
Results of the user surveys

Platforms aimed at orientation

This category of platforms gives the users an orientation or overview of archival collections – these sites are digital catalogues of the holdings. Some of them are also presenting links to digitized sources, and can be viewed as hybrids between catalogues and digital reading rooms. But since the main purpose is orientation about the collections we have here put them in the category "orientation". We have only committed one user study on this type of platforms – the Danish Arkivdk. Recently however, the National Archives of Sweden commissioned user studies on National Archival Database, NAD, and these results will also briefly be covered here.

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[28] Nielsen, Jacob (2012): Usability 101: Introduction to Usability, https://www.nngroup.com/articles/usability-101-introduction-to-usability/

Online catalogues often offer an empty search box like in this example from Swedish NAD. Here you are supposed to write a correct name of an administrative body to get a list over the archive.
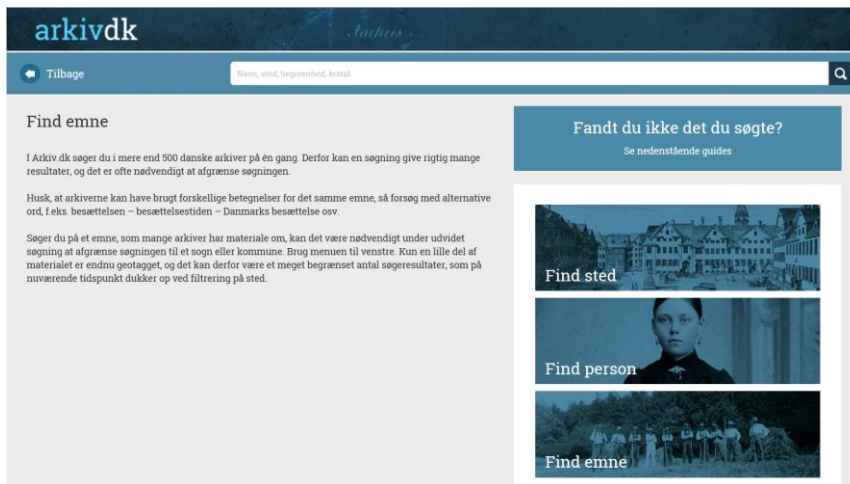

The entry to the Swedish National Archival database (NAD).

Three groups of participants were selected to be part of the study of the Swedish NAD. One group with a lot of experience of using the platform, one with moderate experience and one with very little experience. Several participants found it hard to understand the structure of NAD and the link between NAD, the National Archives of Sweden and the Digital reading room (formally known as SVAR). The interface was not perceived as developed with the user in mind, instead it was said to reflect how the system is built up, or as one user chose to express it: "it is usable but not user-friendly". Another aspect mentioned by the participants was the language used in the site. Experienced users commented that they, over time, had learnt the meaning of certain terms and expressions. For a beginner however, the language of the site can be hard to interpret.

The results of the user studies made the researchers recommend a revision of texts, menus and help sections in the site so that the language would be more inclusive and easier to understand for both new and old users. To not reinforce the system-like feel of NAD it was encouraged that developers tried to simulate vernacular conversation.

The platform Arkiv.dk contains online catalogues from 500 Danish archives and also offers links to digitized documents and photos. At Arkiv.dk, attempts are made to inspire newcomers by offering search on place, person and topic. But, since archives are processed and registered according to provenance and not topic, those search alternatives showed not to be very useful. All users liked browsing around the photos and films but found it difficult when it came to archival documents. They expressed that it was hard to understand the structure of archives and gave up, some also addressed the fact that the archives' terminology and structure are difficult. These findings correspond very much with Yakel's (2002) and Pugh's (2017) results and what they refer to as gaps and barriers between the holdings and the users.

The Danish online catalogue Arkivdk offers search on a place, a person or a topic.

Our studies showed that platforms aimed at orientation, like online catalogues and those aimed at access, like digital reading rooms do not catch and inspire newcomers without a clear question and newcomers who are just curious. Only experienced archive researchers are really interested or positive about the potential of the platforms and are satisfied when using them

Studies of platforms similar to NAD and Arkivdk have been made in the UK where the online catalogue "Discovery" has many similarities with the Nordic-Baltic ones. Pugh (2017) mentions that the usability within the platforms needs improving. Users should be able to operate them more straightforwardly and understanding the systems should be easier. But the systems should also help the users get an overview of the information landscape that they have to navigate. And not the least, the system should teach the users research strategies - like archivists do in the reading room. [29]
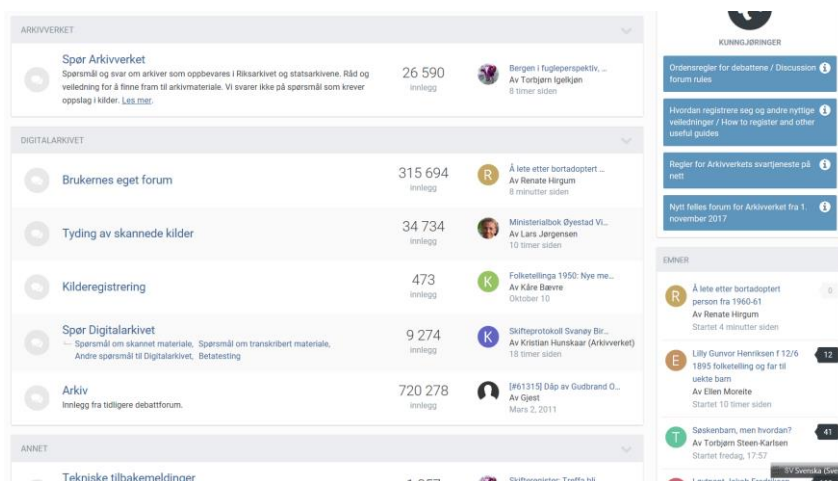
Platforms aimed at access

Several platforms categorised as "aimed at access" were tested in our study. Results of the testing of the Norwegian digital reading room Digitalarkivet and the Icelandic equivalent, Manntal, will be our primary focus here.

Digitalarkivet is the Norwegian digital reading room. The platform is managed by the National Archives of Norway but contains transcribed sources from all kinds of archives. The public is invited to take on transcription work for publishing at the platform. In Digitalarkivet sources transcribed by the National archives and private persons are published side-by-side and as a user you do not know whether the transcription was made by a professional or a layperson. This signals trust in the work done by the crowd and is a gesture of encouragement towards the amateur sector. Digitalarkivet is the only digital reading room in our study that has integrated cooperation with volunteers that includes producing databases, running help forums and co-creation of the design of the platform. The Estonian Saaga platform run by the National Archives, has a crowdsourcing platform about soldiers from World War I in connection to the digital reading room, but it is kept as a separate site.

Digitalarkivet also includes several forums where crowdsourcing plays a major role. For example, anyone can ask for help to find a person in the published sources and one question can lead to

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[29] Pugh, 2017 p 171-176.

hundreds of comments from the public. In another forum users receive help and share knowledge about old handwriting. Interesting however is that these popular chat forums are not visible as you first enter Digitalarkivet. To find them in the rather complicated structure of the site, you have to know about them. In our user studies none of the interviewed persons understood that there were crowdsourcing possibilities and forums on the site. Both new and old users of Digitalarkivet found the site non-intuitive and difficult to understand. From the interviews it was clear that several of our test users misinterpreted what kind of information was available on the site and how much information there was for different sources respectively. Knowledge about archival structure and terminology is necessary to understand the site according to many of the users. The big amount of sources made some users ask for "ranging of the information value".

Digitalarkivet.no with several useful help forums where users can help each other.

Another form of misunderstanding is the users' expectations on platform functionality in terms of linked data. While browsing the internet users are accustomed to follow links as a way to deepen a search. Generally archival sources that we have categorized as aimed at access do not include this type of functionality. For some test users this was confusing as they did not know how to proceed with their search. However, striving for more linked data in this kind of platform might not be desirable as users would miss out on sources and information that can add context and content to the research.

The Icelandic census-database, Manntal, created by the National Archives is mostly used by genealogists and is regarded as the best platform for finding historical information about people quickly. Our test users were triggered to learn more once they understood how to use the site. Generally, the users of the Icelandic platforms (manntal.is, dómabókagrunnur, jarðavefur) were positive regarding the potential of the different materials here. However, on the whole, interviewees with academic background and other experienced researchers gave more positive feed back than test users lacking prior knowledge. It was not the websites as such that had triggered the curiosity, since most of interviewees had first to learn how to use them.

Understanding the structure of archival research combined with bad first impression, poor information and poor usability seem to be the great barrier.

In a real life situation, an archivist or an archival learning officer meeting users face-to-face would listen to their requests and try to help them access the relevant sources. Lacking this facilitation online, one alternative is to imbed artificial intelligence in the search system and develop dynamic term

suggestion and result clustering, as done for example in the Swedish, privately owned, platform, Arkiv digital and in the Danish Arkiv.dk. This is especially useful when borders or names of administrative bodies have changed through times. If you start typing a parish you get suggestions of parish names and you quickly get information about how administrative borders changed throughout times and a reference to the right church book

These types of platforms - aimed at orientation and access - are the entrances to the archives' treasure chambers and contain enormous amounts of raw material that could be used for activity, creativity and learning. However, the user studies showed that broadcasting collections is far from enough. To release the learning potential of these platforms a pedagogical framework must first be developed. In the two remaining categories of platforms, aimed at teaching and participation there are many ideas, approaches, pedagogical methods and technological solutions that could be useful for improving these types of platforms.
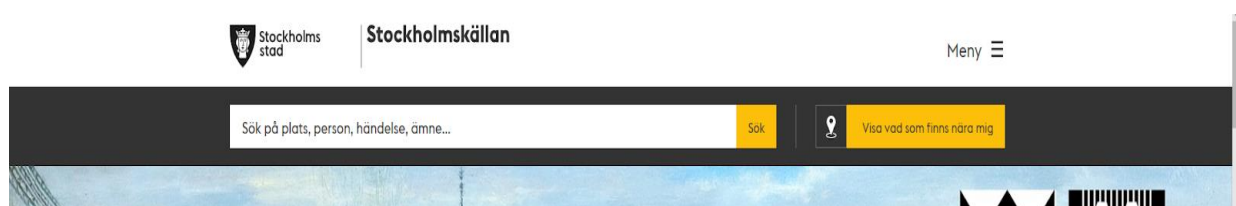
Platforms aimed at teaching

In general, teaching platforms do not publish large collections but present selected sources with relevance to a topic that, perhaps not so surprisingly, are especially favorable for inexperienced users who lack a clear idea of what they are looking for. As an example of this category we will focus particularly on *Stockholmskällan*

Stockholmskällan is a Swedish site and a joint initiative involving different municipal bodies together with museums and archives, produced for schools and for anyone interested in the history of Stockholm. A lot of effort is put into attracting new users. Design is an important aspect and the site has been awarded the Swedish design award and other international prices. In contrast to the resources covered in the section on platforms aimed at access, users of Stockholmskällan do not get an overview of all archival sources via a database. Only by clicking on the "About" section you will find out that the site features 30 000 sources and that they have been selected from archives, libraries, and museums, based on the fact that they tell something about the history of Stockholm. However, at Stockholmskällan this kind of information is not the most important. The important thing is to inspire.

The first thing that appears on Stockholmskällan is a search button where you can search for "place, person, event, topic…". The search box is not "empty", as for example in Digitalarkivet, instead the user receives hints on how to search. The site directs the user which can distract someone with a clear goal in mind but also help beginners to get started. The platform also features the button: "Show what is close to me" as a way to make history relevant for the user by appealing to their interest in or sense of belonging to a certain place. In this way, Stockholmskällan, gives the user the flexibility of choosing different roles or perspectives when accessing the platform.

The different roles are identified on the starting page and in addition there are also questions guiding the user where to start and how to use the resource.

Stockholmskällan gives suggestions on what to search for instead of offering an empty search box, and offers the search: "Show something that is close to me".

All of the test users thought the platform gave a good first impression. The visual impression also made an impact with comments on the "modernity" of the interface and the app-like structure of organizing the materials. It was clear from the users' comments that the inspiring interface made them find even more than they had expected in the first place – things that they did not even know that they were interested in. Or as one test user put it: "I learned a lot because I got curious and read about things I didn't even search for in the beginning."

Users of Stockholmskällan also reported that it was easy to find what they were looking for and to go deeper into topics of particular interest. Based on our findings, the design and the user interface of Stockholmskällan has a high degree of learnability. It has also a high degree of efficiency, since the tasks bestowed upon the test users could easily be accomplished. The degree of satisfaction was also the highest amongst all the respondents in the study. The platform fulfills most of the ten heuristics for usability, which are defined by Nielsen (2005)[30]. These heuristics are the most general principles for interaction design. There is a match between system and the real world meaning that the system uses the language of the users. The design also easily allows the user to exit an unwanted state. There is consistency in the resource and high recognition as the design mimics that of mobile apps and keeps different options visible. There is flexibility and efficiency in the use and the usage can take place on different levels depending on users' experience. In addition, there is also a help function for beginners. In our study this function turned out to be superfluous as all the test users managed the site intuitively.

Forum för levande historia is a site created by an authority sorting under the Departement of Culture in Sweden with the aim to teach pupils about Holocaust and democracy. This site has made a big effort to make archival sources easy to read and understand. More about that will be mentioned in the next chapter.

Platforms aimed at participation

The fourth category in our mapping concerns platforms aimed at participation of which a selected few will be highlighted here.

Our study showed that genealogists are used to work collaboratively. And there are many digital resources made by their organizations to ease the use of archives and teach research methods. They have also developed digital platforms for collaborating and sharing (for example Geneanet and Rötter). The genealogical platforms contain many possibilities for communication in chats, help-forums and e-mails. In our user studies genealogists often expressed the wish to be part of a community, do things together, be able to see and talk to each other and feel that they belong to somewhere.

Geneanet is a participatory type of platform, established in France but used also in the Nordic countries. It was developed for genealogists with "share and work together" as the underpinning idea. User involvement is at the forefront and many of the functions could in principle be useful also in other archival platforms. For example, the site has a well-developed integrated communication system with emails and chat forums. Users can ask the system to send a notification every time a certain name appears in other peoples' research, making it easy to connect to people with similar research interests. Here are also possibilities for the users to share archival documents and registers from archives, share postcards that belonged to relatives to show how the world looked back in their days, to make history more concrete.

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[30] Nielsen, Jacob (2005):10 Usability Heuristics for User Interface Design,
https://www.nngroup.com/articles/ten-usability-heuristics/

Estonians in World War One is a platform established by the National Archives of Estonia. Here people can upload their own documents relating to Estonians during the First World War. Volunteers connected to the site help to type in information (mostly names) from digitized images and thereby contribute to make the sources searchable through search engines. Anyone that can read Russian and old handwriting can become a volunteer.

Test users found the platform inspiring, inviting and modern. Users also found it quite simple and easy to understand. For users that also shared information on the platform it was clear that the site underpins their sense of identity. One man for example, expressed that he felt proud to participate in the building of such an important platform.

The Estonian crowdsourcing platform "Soldiers from World war 1".

However, we did not see the same wish to participate on digital sites amongst professional historians and students. They went straight after the sources and were not thinking about sharing knowledge or communicating on the sites. Young people in our study often wanted to know that there was a possibility to communicate online, even if they did not use the possibility.

How platforms with challenges can be improved and how web design can help

To summarize and draw conclusions from the results of the user studies, we return to the two broad analytical categories introduced to describe the learning challenge faced by today's archives.

Challenge 1: Trigger curiosity

Within the scope of this category we have analyzed in what regard the platforms catch the users' attention, if they get a first positive experience and if they are inspired/helped to figure out what they are looking for? In this chapter we will try to analyze why some platforms are successful in this regard and others not.

As previously mentioned, platforms aimed at orientation and access do not catch the attention of inexperienced users lacking a clear question. Users with academic background and others who are used to do research are generally more positive towards the platforms because they know what they can find there, not because they were inspired by the platforms as such. For inexperienced users especially, it was of course also hard to go further with their searches and several test users reported that they simply did not understand the research process. Adding to this confusion was the fact that the form of browsing often used on the internet generally could not be used to deepen a search. Similar results were found in all countries and in all tests performed on platforms aimed at orientation and access. Usability problems such as difficulty understanding the terminology of the platforms were also commonplace.

Visualization instead of search

In platforms made for other purposes than orientation and access - we found good examples of web design that inspired new users. One could say that the web design is compensating for the eye-to-eye encounter with an archivist or archive learning officer. A user who does not have a clear question can be triggered and inspired by web interfaces that visually supports browsing the collections and strolling around on the sites like a "information flaneur"[31] . That is possible for example in Topoteque Estonia and Stockholmskällan.

Stockholmskällan has used visualization estetique to show content in a quick and inspiring way.

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[31] Dörk, M et al (2011) The information flaneur: A fresh look at information seeking. *Proceedings of the 2011 annual conference on Human factors in computing systems*, 1215–1224

Different ways of browsing the collections identified in our study are, by topic, via a timeline, via a map, by size of collections, by publication date, by owner/publisher. Topoteque Estonia is an example of how browsing collections can be done. All browsing methods mentioned above are in use here.

Topoteque Estonia. "It´s like browsing through granny´s photo album" a satisfied respondent claimed in the user study.

In Australia there are a group of researchers from various disciplines that try to find new ways to browse the archival collections and get away from the traditional search box that demands a query, that the group finds limiting. The aim for the group is also to broaden people's understanding of data, from being something purely functional and efficient, to something that is cultural or challenging.[32]
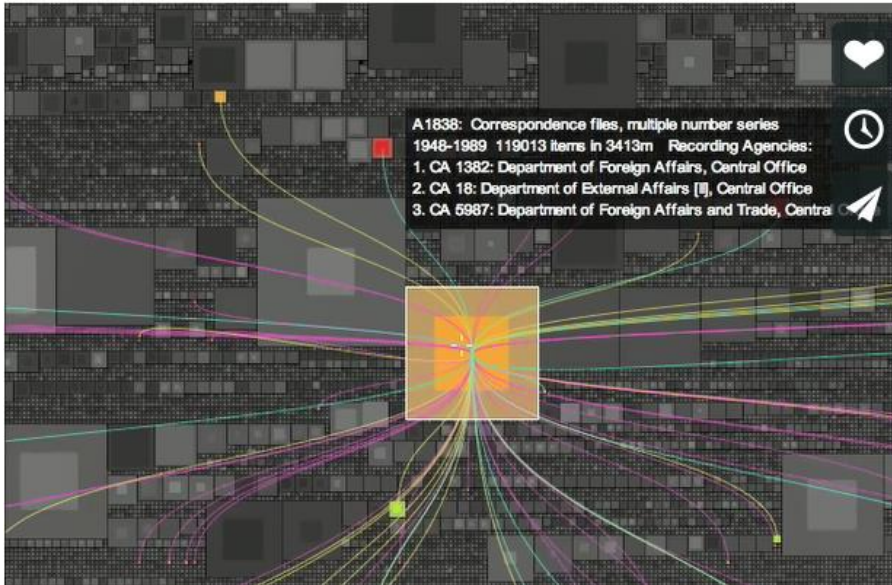
One of these researchers is Joanna Sassoon that has argued that the push for the digitisation of cultural collections, and its focus on "content," risks a decontextualized or superficial view of the archival record. Her hypothesis is that visualisation can redress this tendency, and play a role in enhancing a sense of context in the digital collection. [33]

In accordance to Joanna Sassoon, Associate Professor Michael Whitelaw in Canberra is experimenting with developing an interface that represent the scale and richness of the archival collections. By showing the archive holdings in a visual way he tries to reveal the relationships and structures within a collection, for example the relations between files or topics in one or several archives. Whitelaw can also show the size of the various archives and how archive holdings are divided into age groups. He means that such an entrance to the archives offer multiple ways in, and support exploration as well as the focused enquiry. The picture below shows Whitelaws experiment with showing the content in one archive. The content in this archive cover small shelf areas but has many physically small items. [34]

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[32] Whitelaw, Michael (2011) Generous Interfaces - rich websites for digital collections, National Digital forum 2011, http://visiblearchive.blogspot.com/

[33] Sassoon, Joanna (2006) Documenting Communities: If digitisation is the answer, what on earth is the question?, Connections and Conversations, Australian Society of Archivists conference, Port Macquarie

[34] Whitelaw, Michael (2011)

The digital historian Tim Sherratt (Associate Professor of Digital Heritage, also at the University of Canberra) has investigated parts of the Australian National Archives that are not accessible for the public because of national security or protection of individual privacy. He has used the metadata to trace the non-accessible files and visualises the results in this way. An artistic and inspiring way of showing archive holdings.[35]

Tim Sherratt, Open With Exceptions

A Dutch research project found that experienced users and new users prefer different browsing methods. For example, expert users have been found to like more complex graph-based search approaches, whereas casual users prefer simple search methods such as a controlled natural language approach. The project "Supporting the Exploration of Online Cultural Heritage Collections: The Case

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[35] Whitelaw Michael http://mtchl.net/australasian-data-practices/

of the Dutch Folktale Database" has developed an approach to solve this problem by using the metadata of a collection to visualise the search space and allow the users to refine, change or expand their searches based on selections of these metadata. In an article in the Digital Humanities they show a number of visualisation tools and browsing interfaces for both scholarly and casual users. [36]

Storytelling as a design method
Another trend in web design that could improve the usage of registers and access sites is storytelling. Here the display is designed to be read as a story which gives a more intuitive meeting with the users. Storytelling is linking many principles and ways of thinking together. The display is designed to be read as a story and the information on the display is formed and presented based on the information which is to be displayed. "Browsing a well-crafted interface is like reading a great story". [37] Usually this kind of web design makes the use of a database or system more intuitive and inspiring. An interesting and well-developed storyline is dynamic and lively and gives a good flow on the site. The site Stockholmskällan is the best example in our mapping of attempts to use storytelling as design method. In our study the result shows that all of the users found this kind of interfaces easy to use, even when it was the first time they were using the site.

Augmented reality (AR)
Augmented reality (AR) is an interactive experience of a real-world environment, which is gradually coming into use in the archive sector. Mobile media platforms sometimes make information from the archives visible for tourists and function as a guide throughout the environment. The use of this technique is increasingly used by culture heritage institutions, and one example in the study already using this technique is Stockholmskällan. Here users can download a mobile application that shows historical information added on a picture of the place that the user at the same moment is visiting.

Challenge 2 - Facilitate learning

There are, as we have seen, many possible ways in which platforms could improve in order to trigger the curiosity and interest of users. However, once a platform has fulfilled this goal, it is important to facilitate the progress of learning. Our user studies clearly show that the major challenge with using archival online platforms is the amount of knowledge needed on forehand to be able use them. How can learning be facilitated and reinforced in the platforms studied? We found many good examples of that in the sites produced for schools and genealogists as target groups.

General information and tutorials

Many test users complained about the information received on the platforms aimed at orientation and access. They lacked general information about the content, the infrastructure (what can I expect to find here, why are things here, what is not here) the idea behind the site, what priorities had been made etc. They lacked information about the use of the databases and the connection between the sources and the authorities that created them. The also asked for more information about how to use historical

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[36] Trieschnigg, Dolf et al (2017) Supporting the Exploration of Online Cultural Heritage Collections: The Case of the Dutch Folktale Database. Digital Humanities 2017, Volume 1, Number 4
http://www.digitalhumanities.org/dhq/vol/11/4/000327/000327.html
[37] E.g. https://trends.uxdesign.cc/, https://medium.com/u-plus/future-trends-in-user-experience-design-1-path-to-storytelling-8049f5d4eeeb

sources. They also needed information about history of administration, administrative borders etc to be able to do research. In other words, the platforms lacked learnability.

General information
Experienced and less experienced users of archives have different needs with regard to information, something which the British national archives website Discovery has solved in an elegant way by offering different entrances for different kinds of users. This approach could possibly be used in other archival sites. However, taking the users literally could sometimes be deceptive. Some users in our study, primarily those with experience, stated that they had a good overview of the content in the sites, but it was often discovered, after having asked them in detail, that they had not got the complete overview after all. They thought they had understood what was offered on the platforms (specially platforms for orientation and access) – but had in fact only discovered parts of it. Developers therefore need to make sure that all relevant information is easily seen.

Tutorials
The pedagogical sites for schools and some sites created by and for genealogists have tried various ways to inform the users and support their learning. Films, quiz (Kahout), texts and pictures are used. For archives that want to have inspiration there are many places to look at (Danish National archives school site, Forum för levande historia, Stockholmskällan, Rötter for example).

When asked in our user studies about tutorials and learning tools, quite a few responded that they did not like films as instructions. The test users' explanations for this varied. Films are not practical if you are in a reading room and are required to work without the sound on, one woman replied. Other comments were that films are hard to remember anyway and that film are outdated since any site should be intuitive enough to handle without this kind of instructions.

In the Danish part of the study people were very innovative when asked about how their learning could be facilitated. It seems that they would like the whole palette of possibilities - bubble/pop up, films, pictures, chat, practical examples and cases - because it is possible. So archives will probably need to perform user studies connected to the actual platforms to find out what to use where with most impact.

Voice User Interfaces (VUI) is a new trend in web design that could be useful for archives – it means screen-less interactions between user and software. This technique leads to new challenges and new opportunities in audio segment. VUIs give the user the opportunity to interact with the system through voice or speech commands. There are such systems available already, e.g. Siri and Google Assistant. However, in our mapping study, there were no such system included and we have not found any archive system with this kind of user interface. When using VUI there has to be an awareness of the limitations of the technique. The VUI has to understand spoken language, and the users have to understand what commands they can use and also what kind of interactions that are possible. The apprehension is that the users generally have to high expectations on the VUI. The users need to understand that a normal conversation like human-to-human conversation is infeasible. The big advantage with VUI tough, is the possibility to use the system while doing something else. A combination of this technique with AR when e.g. applying information from archives on a city of today, could be useful as it gives the possibility to talk to the system while being on a guided tour through an app using AR. There are probably many other situations where VUI in the future could be useful in order to support learning in archival platforms.
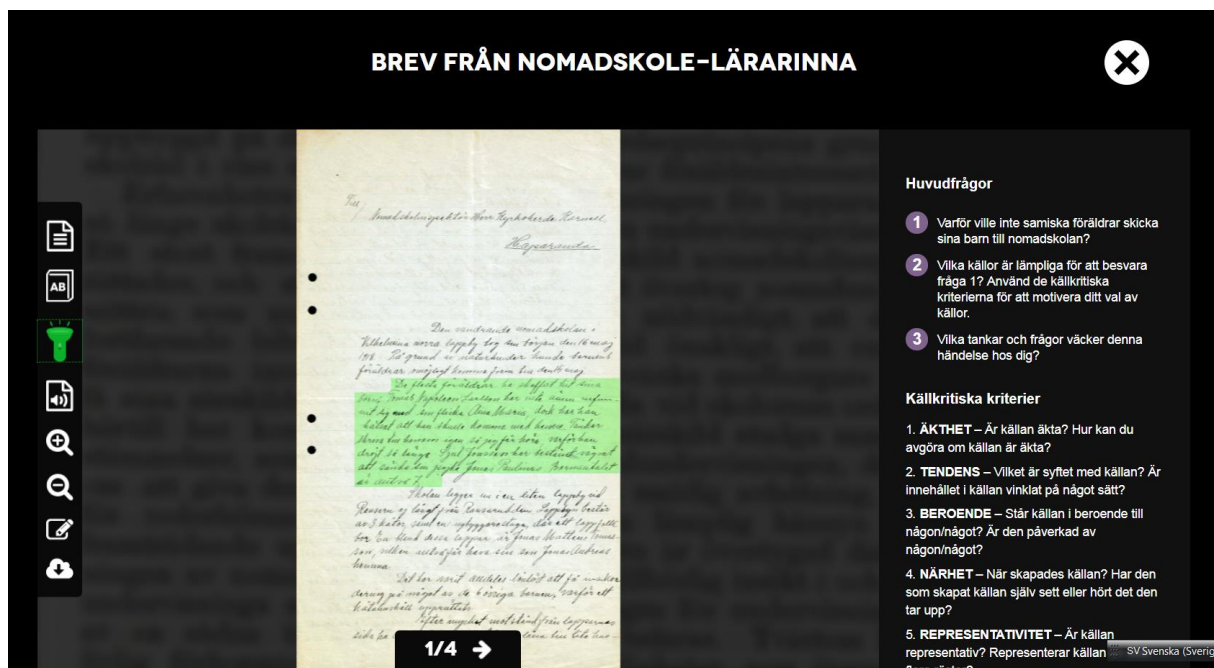
Teaching research methods

Our study and the study of Jo Pugh (2017) has shown that in order to make platforms aimed at orientation and access easy to use, the platforms have to – in one way or another - help the user to

understand how archival research is done. If not, the online catalogues and reading rooms will only be useful for already experienced users. In the international debate around 2000 – one camp meant that the users shouldn´t have to learn all that - the sites should be made so easy that everyone could use them. Before that stage is reached, a solution would be if the sites could teach users in an easy, elegant way how to do research. That would stimulate life-long learning for everybody a great deal.

In all platforms in our study aimed at teaching, historical methods are described in an accessible way, in texts or films. And by letting the pupils use selected sources and answer questions they are led, step by step, into the world of archives and sources criticism. Good examples are found in the Swedish National Archives´ Möt källorna and the learning site made by the Danish National Archives.

Forum för levande historia has taken a lot of technical solutions in use for making complicated text documents understandable. For example, it is possible to listen to archival texts, write in digitizes text documents, see the most important parts highlighted etc. Maybe some of these elements could be taken into use in platforms aimed for adults?

Forum för levande historia has developed a great toolkit for easy the access to old documents.

The archival sources in the mapped online platforms contain a lot of information that really could trigger the detective in you. Experienced researchers often realize this, but the big question is how creators of the platforms can make beginners aware of it. Can we design the platforms so that users without knowing it, falls into a detective working method?

Jo Pugh (2017) thinks that should be possible. He means that the most important for a researcher is to lay the jigsaw puzzle, "that metaphore illustrates a key aspect of exploratory search, namely that overall progress is more important than locating any particular item or the result of any discrete topic search".[38] He claims that this might be something that separates archival researchers from other kind of users that often appear in user tests. Pugh continues to suggest that maybe elements from gaming

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[38] Pugh (2017) p 147

could be applied into information seeking systems to release the detective feeling. "The relationship between information seeking and gaming is an interesting one. There are clear similarities between the two insofar as digital research is (or can be) an ergodic activity including challenge, feelings of progress and some sense of immersion."[39] We agree med Pugh, and think that the archival sources could be, if curated/presented in the right way, thrilling and awake the detective in everyone. This could more than anything support life-long learning. Gaming technics could be one solution, but there are for sure other methods to be tried out as well.

Participate and communicate

Many of the people in the user studies expected to be able to communicate within the platforms.

When it comes to crowdsourcing there are well developed methods on how to keep the crowd motivated. The crowd consists of single users that do not work for free without a reason. The participants can have a strong motivation because they identify with a historic époque or event etc., as seen above, but they can also be driven by a wish to share knowledge and be of help to others. In this study we have also seen crowd sourcing projects where the participators don´t identify with the objects that much. In the Estonian Ajapaik people helped tagging photos on a more basic level – they helped to establish the angle from where a photo was taken in a city for example. A lot of gamification methods are used to trigger people to go on with the work - for example to build a community feeling, and give rewards to users.

There could also be other possibilities to visually improve the feeling of belonging to a community. The web design trend "immediacy" has often shown to be useful. It means to make people be seen and see others that work on the same site simultaneously. That is for example used at the site Geneanet and it encourages people to connect on chats etc.

Another design trend that is emerging on the web, is "Interactive content", which means user interaction in two-way, i.e. the user is not supposed to just look or read when it comes to downloadable static content. The user is instead invited to interact with the content. The users become active participants and the interactive content can include e.g. games, contest, assessment tools etc. This trend is not present in any of the resources/databases in the study. However, interaction is desirable amongst some of the users and perhaps this kind of interaction can be of interest as a kind of tutorial.

Learning outcomes

In this study we have also had the ambition to indicate possible learning outcomes by using online archival platforms. To make users reflect on what they have learned by using a platform is difficult. Most respondents did not immediately see what they had learnt. But after discussion with them about the kind of work they had done on the platform, they often realized that they had learned new facts or improved skills.[40]

Quiet often test users remarked that they learned a lot by doing archival research, but that was not due to the platform. It was the sources and the research process as such that made them learn new facts and skills. Several also replied that they had started to reflect in a more general way - on history, on how information is created, on the amount of information that can be found etc. Some people meant that

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[39] Pugh (2017) p 177

[40] In Dodd et al (2005), study of how archivists facilitate learning through archives they got similar results. First after reflecting together with the interviewer did the respondent.

the use of the web sites had influence their routines when it came to systemize results, their use of source criticism and how to do to learn more. Also other skills were mentioned.

These findings clearly indicate that working with archival platforms besides giving new knowledge, can also strengthen skills, competences, attitudes, values and behavior - all important parts of the life-long learning process. If the platforms would be designed from a lifelong learning perspective the learning outcomes could be of big importance.

Next, we present our key findings with a checklist that can help those who want to create or improve web sites that put archival sources in play in one way or the other.

Key findings

Digital settings do not rule out the learning strategies and methods used by archivists and archival learning officers in real-life situations. On the contrary they become even more important. Compared to the real-life situation a digital setting does not provide a second chance to make a first impression on the user. In many ways, the contrast between the fast moving flow of impressions in the digital world and the oftentimes calm and controlled environment of the archive could not be greater. In an eye-to-eye encounter, an archivist or an archival learning officer can fine-tune information and regain the attention of a user who is about to lose interest. Similarly, they can facilitate learning on an appropriate level or suggest alternative ways forward for the user. To engage users digitally require a learning design that incorporates experiences on archival learners in real-life situations combined with advanced, flexible technical solutions and easy-to-use interfaces.

It is clear that no profession can stand on its own in this development. The results of this study call for more cross-sectorial approaches where teams of professionals with different competences work together to take on the challenges of developing digital archival platforms that are relevant for all kinds of users, today and in the future.

To not become obsolete, National archives in particular can learn from platforms that they themselves do not control but who are basing services on their materials. Thus, when it comes to filling the learning gap between the platforms and the public, the development is more often driven by those refining the raw materials than those providing it. Archives that do not make an effort to advance digital learning, run a serious risk of losing contact with its users to the extent that the archives no longer understand the users ´ incentives and their needs. Further, archives might also miss out on the possibilities of participating and co-producing with their users online. On the one hand, some might say that there is nothing wrong in this picture and that National archives should remain in the broadcasting role. On the other hand, it could be argued that this standpoint constrains democratic development and opportunities for life-long learning.

On the outset of this study, we assumed that level of digital competence would be decisive for the results of our user studies. This assumption proved inaccurate. Digital competence matters to some degree, but what matters more is whether or not the users approach the platforms with a specific question in mind. We further expected that the users' level of prior knowledge concerning archival functions and contents would have effect. These expectations turned out to be correct.
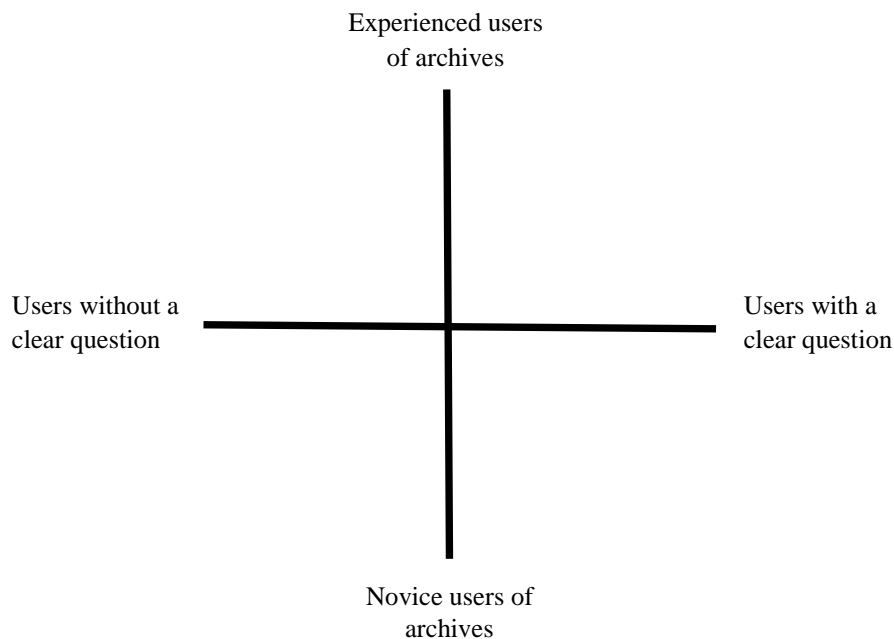
According to the findings of this study, there are, strictly speaking, four different categories of users to consider when developing a digital platform:

- Users with a clear question
- Users without a clear question
- Experienced users of archives
- Novice users

Below we put these categories of users in a model. The model let us elaborate with a combination of user roles viewed as a continuum. Thus we can more easily reflect upon starting points and possibilities for development for each role respectively. Further it can direct us in making decisions about how, where and with what measures we should act in regard to our users, digitally or in a real-life situation.

A person with a clear question can be an experienced archive user or a novice, as can the user without a clear question.

Model for understanding user starting points and development[41]

Experienced users
of archives

Users without a   Users with a
clear question   clear question

Novice users of
archives

Another interesting result of this study is that by focusing on digital learning about and through the archives we better understand what defines learning in real-life situations. Comparing learning in these two different settings and letting methodological approaches inspire one another is therefore more fruitful than trying to isolate them.

Scandinavian research in system development has traditionally emphasized involvement of the users in the development process - participatory design (Ehn 1993). It is a method to involve the users and to create a collaborative approach when designing systems in order to develop interfaces with good usability and to improve the user experience.[42] A participatory approach is needed also when designing archival digital platforms for the future. But archival digital platforms are not like most platforms out there. They contain enormous amounts of complex information that is hard to search and grasp. Therefore, to release the learning potential of archival digital platforms, participatory design and designs for learning must go hand in hand. Through the user studies presented above, we have started to explore this field and identified areas of importance that need further research and improvement. All reflection on user groups and their needs must start by changing our own mind-sets. This repositioning can start by using a model like the one suggested here.

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[41] This model was created by Eva Tegnhed during conversations on the result of our findings.
[42] Ehn, P (1993) Scandinavian Design: On Participation and Skill in Schuler D & Namioka A (eds), Participatory Design: Principles and Practices, L. Erlbaum Associates, Hillsdale, N.J., pp. 41–78.

Who are your users?

Different users have different needs. It is crucial to involve the users while planning and constructing a digital platform.

To establish what your users need are, it is recommended to find out if they:

- have experience in archival research and to what extent
- have never before done archival research
- have a clear question
- have no clear question but are curious to explore the collections
- are interested in social activities?
- are experienced researchers with quick results as the only aim

User involvement in the development process is needed to be able to develop systems with high degree of usability. Participatory design can be used as a method. Usability tests should also be done during the development process. It is enough to test 5 persons.

Triggering interest/curiosity

- Inform on the entry page what to expect from the platform so that important services/possibilities are not are hidden from the users (e.g. chat forums, participation possibilities, different search functions). Storytelling is a design trend that can be useful in this regard.
- An informative and easy-to-understand entry is crucial for users to feel welcome. A positive and welcoming atmosphere is further enhanced by a modern user interface. Humor can be used where suitable, for example in the choice of pictures.
- It can be a good idea to create different user entrances for the online reading room or the digital catalogue. For example, make separate entrances for experts and beginners, or for people with different roles.
- Visualization is a powerful tool that allows users explore collections in new ways, and it´s especially helpful and inspiring for users who do not have a clear question. Therefore, visualize the collections or services and make browsing possible.
- Identification is a key factor to create interest. Make users identify with collections by connecting to, for example:
  - topics with contemporary relevance
  - topics that trigger peoples' own memories
  - a place
- Interactivity is important to many users. Immediacy is a current design trend aimed at facilitating communication between users by showing which users are simultaneously logged into a web application. This kind of functionality can be used for example at crowdsourcing sites but also at online catalogues or digital reading rooms.

Facilitating learning

- Offer help to understand how to do research in archival sources
- Facilitate the search in digital reading rooms and online catalogues:
    - by suggesting what to search for – do not simply offer an empty search box
    - by suggesting names of archives
    - by suggesting administrative bodies (dynamic term suggestion and result clustering)
- Make people feel they enhance their research skills. If they manage to find what they are looking for, make it easy for them to understand the next step. If your platform has good learnability this will help users see their own progress.
- Support "the detective" in your users by making them understand the context of their sources. Visualisation of the relations within or between collections can be helpful.
- Use different kinds of tutorials. Short help boxes are often preferred instead of separate pages or films. However, remember that users' preferences vary.
- Use technical solutions to facilitate learning about sources - highlight texts, enlarge parts of texts, make it possible to listen to texts etc.
- Make use of open source tools found online instead of inventing your own expensive products, for example tools for slideshows, quizzes etc.
- Go to platforms aimed at teaching to find new pedagogical approaches. Assignments used on archival sites for schools can also be used on other type of platforms to facilitate learning for adults.
- Open up for peer learning. To communicate with a peer user or an archivist in forums, chats and internal mail systems can facilitate the learning process. Besides getting answers to questions, many people also find it meaningful to help others and connect to people with similar interests.
- Voice User Interfaces (VUIs) give the user the opportunity to interact with the system through voice or speech commands. That is a tool that can be useful for archives in a learning situation.
- Interactive content can be used for example in tutorials

Participation and sharing

Participation can be obtained in many ways:

- Sharing the results of research
- Sharing a source or a catalogue
- Sharing knowledge
- Engaging in forums where users help each other
- Commenting
- Tagging
- Show other users that you are active on a site, for example by logging in
- Asking the system or other users to give notification when something of interest to you turns up.
- Possibilities for users to create a wish list for digitization of sources
- Crowdsourcing, in the form of a project or a whole site. Participants can contribute with, for example:

- o Knowledge
- o Skills
- o Funding
- o Content
- o Work-hours
- The engagement in crowdsourcing projects are often triggered by
  - o Identification
  - o The feeling of belonging to a group
  - o The feeling of doing something important
  - o Gamification methods

References

Cook, Terry (1990) Viewing the World Upside Down: Reflections on the Theoretical Underpinnings of Archival Public Programming, *Archivaria* 31

Dodd, Jocelyn et al (2005) Engaging Archives with Inspiring Learning for All. A report prepared for MLA North West. RCMG, Leicester 2005

Dörk, M et al (2011) The information flaneur: A fresh look at information seeking. *Proceedings of the 2011 annual conference on Human factors in computing systems*, 1215–1224

Ekholm, Mats & Härd, Sverker (2000) *Lifelong learning and Lifewide learning*., Stockholm Erichsen Chris (2008) Arkivene ville blitt utilgjengelige kaos, *Bok og bibliotek*, Nr 7/8 - 10. mars 2008. http://www.bokogbibliotek.no/arkivene-ville-blitt-utilgjengelige-kaos

Ehn, P (1993) Scandinavian Design: On Participation and Skill in Schuler D & Namioka A (eds), *Participatory Design: Principles and Practices*, L. Erlbaum Associates, Hillsdale, N.J

Ericsson, Tim (1990) 'Preoccupied with our own gardens': Outreach and Archivists, *Archiviaria* 31

Grut, Sara & Press, Maria (2015) Active encouragement of accessing archives:a prerequisite for democracy, *Comma*, 2015(2) https://online.liverpooluniversitypress.co.uk/toc/coma/2015/2

Trieschnigg, Dolf et al (2017) Supporting the Exploration of Online Cultural Heritage Collections: The Case of the Dutch Folktale Database. *Digital Humanities 2017*, Volume 11 Number 4 http://www.digitalhumanities.org/dhq/vol/11/4/000327/000327.html

Matheson, David & Matheson, Cathrine (1996) Lifelong learning and Lifelong Education: a critique, *Research in Post-Compulsory Education*, Vol. 1, No. 2, 199

Nielsen, Jacob (2005):10 Usability Heuristics for User Interface Design, https://www.nngroup.com/articles/ten-usability-heuristics/

Nielsen, Jacob (2012): Usability 101: Introduction to Usability, https://www.nngroup.com/articles/usability-101-introduction-to-usability/

Pugh, Joseph Jonathan (2017) Information journeys in digital archives, *University of York Computer Science, pjD, September 2017*. http://etheses.whiterose.ac.uk/id/eprint/20663

Sassoon, Joanna (2006) Documenting Communities: If digitisation is the answer, what on earth is the question? Connections and Conversations, Australian Society of Archivists conference, Port Macquarie, 2006.

Taylor, Joel & Laura Kate Gibson (2016) Digitisation, digital interaction and social media: embedded barriers to democratic heritage, *International Journal of Heritage Studies*, DOI: 10.1080/13527258.2016.1171245

Tegnhed, Eva (2018) Arkiv är till för att användas. *Enskilda arkiv*. (red) Hagström och Ketola, Lund

Whitelaw Michael (2011) Generous Interfaces - rich websites for digital collections, National Digital forum 2011, http://visiblearchive.blogspot.com/

Whitelaw Michael (2015) Generous Interfaces for Digital Cultural Collections, *Digital humanities* 2015, Volume 9, Number 1
Whitelaw Michael http://mtchl.net/australasian-data-practices.

Wilson, Ian (2009) Opening speech at Nordic Archives Day, Trondheim, Norway.

Yakel, Elizabeth (2002) Listening to Users, *Archival Issues* (26/2).

Yakel Elizabeth and Torres Deborah (2003) AI: Archival Intelligence and User Expertise. The American Archivist: Spring/Summer 2003, Vol. 66, No. 1, pp. 51-78

Reports:

The DigiCULT Report (2002) Technological Landscapes for Tomorrow´s Cultural Economy Unlocking the Value of Cultural Heritage. Full report. January 2002. European Commission, Directorate-general Information Society D2. http://dx.doi.org/10.1080/13527258.2016.1171245

Internet resources:

UX Trends https://trends.uxdesign.cc/ (Retrieved on October 31, 2018)

Future Trends in User Experience & Design # 1—Path to Storytelling https://medium.com/u-plus/future-trends-in-user-experience-design-1-path-to-storytelling-8049f5d4eeeb (Retrieved on October 31, 2018)