



**EuroClio**  
Inspiring History and Citizenship Educators



Co-financed by the Connecting Europe  
Facility of the European Union

## Digital innovation in History Education – a Field Research on Needs Assessment

Research Framework on Improving Discoverability, Opening Up Historiana Project,  
part of Europeana Digital Service Infrastructure 4

---

EuroClio, European Association of History Educators, The Hague, the Netherlands  
Fani Partsafyllidou, Research and Development trainee  
June 2020

## Contents

Introduction .....	2
Aims .....	2
A few words about the platforms .....	2
Europeana .....	2
Historiana.....	2
How is this research connected to these platforms?.....	2
Who can benefit from this research?.....	3
Procedure .....	3
Methodology behind the Survey.....	3
Sampling.....	3
a. Covering secondary education and the first circle of higher education.....	4
b. Variety of countries.....	4
c. Gender .....	4
Making the Questionnaire.....	4
Structure and rationale.....	4
Questions about Europeana Sources .....	6
Questions about the interface and metadata.....	12
Conducting the survey.....	13
Assessment of the responses .....	14
Assessing Representativeness.....	14
The responses.....	16
Responses about Europeana sources .....	16
Responses about the interface and metadata.....	19
Findings.....	23
Conclusions.....	24
Recommendations for further research.....	24

# Introduction

## Aims

This research has a twofold aim; to determine which types of sources should be digitised according to educational needs, and to propose changes that will improve sorting and finding of the existing sources that are available online. During this research, EUROCLIO will conduct a *survey* targeting history educators in order to conclude on the following questions that are related to the aforementioned aims respectively:

### A. The sources

*What kind of sources are history educators looking for?*

*Why do they select the sources they select?*

*Why are they not selecting the sources they do not select?*

### B. Search optimization

*What are the search words that history educators are using?*

*Which of the advanced search options are history educators using?*

## A few words about the platforms

### Europeana

Europeana is the largest cultural heritage platform in Europe, hosting the digital collections of national museums, galleries, and archives. Any cultural heritage institution can join the Europeana community and make use of its technological services such as transcription, translation, etc. Although it was created by the European Union, it welcomes collections from other countries too. Europeana.eu is free, accessible by anyone. For the average user, searching in Europeana equals to searching 3.000 databases of cultural heritage.

### Historiana

Historiana.eu is a platform for history teachers. It enables them to search Europeana for images, save them to their account, and then use them to create lessons, especially for interactive eLearning activities.



### How is this research connected to these platforms?

This research is part of the activity 'Improving Discoverability' of the project 'Opening Up Historiana', a Digital Single Infrastructure activity. It is implemented with the financial support of the CEF Telecom Programme of the Innovation and Networks Executive Agency (INEA) of the European Commission. The aim of the project is to promote the digital collections of Europeana from the scope of historical education. This research explores the preferences and the search behaviour of history teachers, which

is a valuable element of the Needs Assessment. Its purpose is to make sure that the technological developments in Europeana and Historiana meet the current needs of the European educational community.

### Who can benefit from this research?

This research can be of great interest for the Digital Humanities sector.

## Procedure

Hereby the course of actions regarding the research will be explained briefly.

1. The procedure started by creating a survey, designing an effective questionnaire and an evaluation process about the participants' diversity and about the answers. (September-October 2019)
2. The survey was conducted during multiple events with a pedagogical topic. (November 2019-February 2020)
3. It was confirmed that the educational community is accurately represented by the participants of our survey. (March 2020)
4. The quantitative data analysis followed, to translate the individual answers into cumulative results. A weighted average was calculated for each of the questions. (March 2020)
5. These data were analysed to highlight the aspects that are more important and useful, producing the *Findings*. (April-May 2020)
6. At the end, it was examined what these findings practically mean, and what is their insight for future steps, forming our *Conclusions*. (April-May 2020)
7. The research was published in EuroClio.eu website. (June 2020)
8. The research was used to make technical recommendations to Europeana on Search Engine Optimisation. (June 2020)
9. The research was disseminated by EuroClio. (June 2020)  
Further dissemination EuroClio has a vast network of history teachers around Europe who will be informed about the results of this research via our website, mail newsletter, and social media. Furthermore, affiliated organisations may share it to their own networks of history educators.

## Methodology behind the Survey

### Sampling

To get an insight of the needs of history educators across Europe it is crucial to make sure that the participants in our survey are representative of the educational community across Europe. This is important because in EuroClio we want to make sure that in the long term Historiana will respond to the variety of needs and demands in different regions and teaching styles.

Although the survey will be open to the educational community, and thus the participants will not be decided by the researcher, after the period of the survey is over the evaluation process will start

by measuring the anonymous personal information of the respondents and checking whether they are diverse and inclusive regarding the following criteria:

**a. Covering secondary education and the first circle of higher education**

The educational material hosted in Historiana is designed to support secondary education and the first circle of higher education. This means that the topics are chosen to appeal to students aged 12-21 and subsequently they are curated, written, and edited with this target group in mind. However, the linguistic barriers and the disparities between countries' lesson plans may lead to difficulty in teaching a considerable amount of sources in practice. So feedback is needed from teachers who work in secondary education, preferably equally distributed among classes, and from academics who lecture at introductory courses of Bachelor's programs.

**b. Variety of countries**

Each country has unique educational content and resources. To make sure that the online material can be combined with the existing curricula, we have to involve history educators from as many European countries as possible. After the survey closes to the public we will check whether Eastern Europe is represented equally with Western, and Southern with Northern.

**c. Gender**

64% of secondary education teachers in EU are female according to Eurostat<sup>1</sup> and UNESCO Institute for Statistics<sup>2</sup>. There is no distinction among lessons, so there is no figure available for the percentage of women who teach history in European schools. The percentage is considerably lower when it comes to universities, where the percentage of female professors in the EU is 24%<sup>3</sup>. As for museum educators, I failed to find gender statistics. The average percentage of women between teachers and professors in the EU is 44%. We will consider this as a minimum to ensure accurate representation.

## Making the Questionnaire

### Structure and rationale

The questions asked in the survey are divided into two parts, the first one is related to historical sources and the second one is related to search behaviour. In the beginning, the participant sees 14 images from Europeana. They act as visual historical sources and they are presented in exactly the same way as it is currently seen in Europeana (October 2019). 6 questions are about the Europeana Sources. In the next section of the survey, the questions focus on the interface and metadata.

---

<sup>1</sup> Eurostat 2014 <https://ec.europa.eu/eurostat/documents/2995521/7672738/3-04102016-BP-EN.pdf/9f0d2d04-211a-487d-87c3-0a5f7d6b22ce>

<sup>2</sup> UNESCO Institute for Statistics 2018 <https://data.worldbank.org/indicator/se.sec.tchr.fe.zs>

<sup>3</sup> Publications Office of the EU 2018 <https://op.europa.eu/en/publication-detail/-/publication/9540ffa1-4478-11e9-a8ed-01aa75ed71a1>

A challenging aspect of this step is to include as much variety of the primary sources as possible. The challenge lies in the fact that there are currently 50 million cultural heritage items uploaded on Europeana but the sample incorporated in the survey has to be small enough to keep the questionnaire user friendly.

To overcome this challenge, a two-level selection was implemented. First, one source had to be selected out of Europeana's 14 categories; second, within this group of 11 sources there had to be a variety in the amount of additional information provided: a date, a description, and a lack of them. This will be useful during the assessment process, to find out which sources were marked as having enough information by the participants.

A set of 11 sources representative of the Europeana collections will point out which collections are the most popular with history teachers by measuring how many participants answered that they would use each of the sources. This way we can identify the three categories that came up with the most votes and the three with the least votes. However, this will be just an indication and not a definite conclusion because the rationale of this Questionnaire is source-based, not collection based.

The source will be evaluated not as a mere visual object but as a group of information that is presented to the viewer at the same time, just as it happens on Historiana and Europeana. Namely, the participant comes across:

- the title
- the description, or lack of
- the date
- the provider
- the language

This way we can align the participants' reasoning for using or not using a source with the data we provided to him. For example, we can measure how much the indication of date and the description affect the participant's perception that they have enough information and how much this, in turn, affects their decision to teach the material or not, which is measured by the first question. We can also draw conclusions on the teacher's probability to use a source that contains language in a European language other than English.

Since this is the most detailed part of the Questionnaire it is expected to give us the most reliable results, meaning that at the end of the survey it will be safe to assume that the results reflect clearly the participants' thoughts. It is designed this way because this is the most important question for Opening Up Historiana project, to make sure that the content that is being curated will satisfy the needs of history education. The data that will be collected from the answers of these two questions will be valuable individually but even more in combination. Measuring the overlap between the sources' qualities and the positive responses to the first question we can find out which factors are the most decisive for making a source to be qualified as suitable for teaching.

### Questions about Europeana Sources

The participant is asked 6 questions. First, he has to sort the 11 sources according to how likely it is that he would use them in a lesson. This second question resembles the scenario where a user has already seen this image and wants to find it again. 'What would you type in the search engine to find this item?' The participant has to answer this only for his top 3 picks. The same goes for the next question 'Which historical events or developments / substantive concepts do you associate with this source?' It resembles the scenario where a teacher wants to search for a source according to the topic, the most common practice. Then, he is asked to explain his choice 'Why are you likely to use this item with your students?' Regarding his last choice, he is called to explain 'Why are you least likely to use this source with your students?'. Finally, another questions asks if any image omitted is potentially interesting, phrased 'Would you be more likely to use any of the items if more information was provided? If so, please indicated which item this is, and what you would like to know.'

This is the set of sources the participants had to choose from, including title, description, and providing institution. The links to Europeana are referenced in the footnotes.

Source	Description
	<p><b>Item A<sup>4</sup></b></p> <p>Munition workers in a shell warehouse at National Shell Filling Factory No.6, Chilwell, Nottinghamshire in 1917. This was one of the largest shell factories in the country © IWM (Q 30018)</p>

---

<sup>4</sup> A.

<https://www.europeana.eu/portal/en/exhibitions/visions-of-war/trench-life>

Item B<sup>5</sup>

Turky in Europe and Hungary, 1790

Политико-историческа карта  
Вероятно е картен лист от атлас;  
Мащаб в английски мили, Cyril and Methodius National Library of Bulgaria

Item C<sup>6</sup>

Pilgrimage legend, 1500-1600 Tafelbild  
(Einrichtung/Innenausstattung)/Votivbild  
, Institut für Realienkunde

<sup>5</sup> B

[https://www.europeana.eu/portal/en/record/91932/umapesBC\\_342.html?q=map#dclid=1583839318802&p=4](https://www.europeana.eu/portal/en/record/91932/umapesBC_342.html?q=map#dclid=1583839318802&p=4)

<sup>6</sup> C

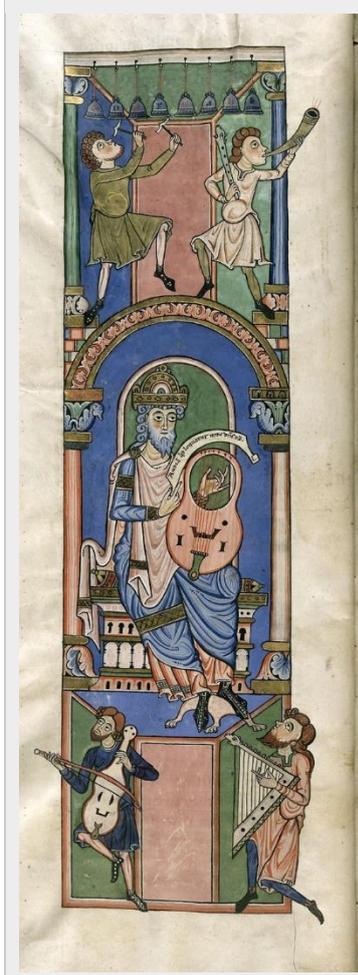
[https://www.europeana.eu/portal/en/record/2023006/24062A51\\_prief\\_16756](https://www.europeana.eu/portal/en/record/2023006/24062A51_prief_16756)

	<p><b>Item D<sup>7</sup></b></p> <p>Letter looking for work. User contributed content, Europeana Foundation</p> <p>'I was recently cleaning out my father's house and found this little letter.</p> <p>It comes from a young man from Moldova who was looking for work on a farm in Ireland. He must have replied to an ad my father posted somewhere. My father is a farmer in county Galway. The letter reminded me of letters Irish people would have sent in the past, looking for jobs in England or America.'</p>
--	---

---

<sup>7</sup> D

[https://www.europeana.eu/portal/en/record/2020601/https\\_1914\\_1918\\_europeana\\_eu\\_contributions\\_1182.html?q=DATA\\_PROVIDER%3A%28%22Europeana+1914-1918%22%29+AND+edm\\_UGC%3Atrue#dcId=1583839318802&p=1](https://www.europeana.eu/portal/en/record/2020601/https_1914_1918_europeana_eu_contributions_1182.html?q=DATA_PROVIDER%3A%28%22Europeana+1914-1918%22%29+AND+edm_UGC%3Atrue#dcId=1583839318802&p=1)



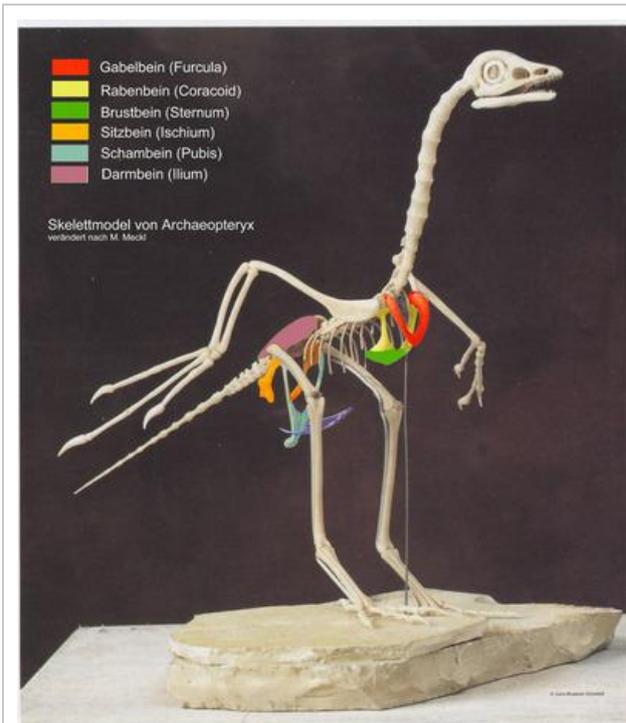
### Item E<sup>8</sup>

1150 - 1174, detail of a miniature of David playing a harp, surrounded by musicians playing bells, a cithar, a horn, and a rebec. Image taken from f. 3v of Bible (the 'Worms Bible'), Psalms-Acts 16:17, imperfect. Written in Latin. David from BL Harley 2804, f. 3v, The British Library

---

<sup>8</sup> E

[https://www.europeana.eu/portal/en/record/9200397/BibliographicResource\\_3000126283291.html?vie=http%3A%2F%2Fmolcat1.bl.uk%2FIIImages%2FEkta%2Fbig%2FE073%2FE073601.jpg](https://www.europeana.eu/portal/en/record/9200397/BibliographicResource_3000126283291.html?vie=http%3A%2F%2Fmolcat1.bl.uk%2FIIImages%2FEkta%2Fbig%2FE073%2FE073601.jpg)

Item F<sup>9</sup>

Grafic-Model of the ancient bird Archaeopteryx lithographica with comparative features to modern birds, Jura - Museum Eichstatt

Item G.<sup>10</sup>

International herald tribune : published with the New York times and the Washington post 13 avril 1897 1897/04/13 (N22149) -- Bibliothèque nationale de France, département Droit, économie, politique, GR FOL-PB-1751 (BIS)

<sup>9</sup> F

[https://www.europeana.eu/portal/en/record/2023901/ArcaSite\\_obj\\_ah2\\_MUHNAC\\_0002258\\_MB\\_IMG\\_web\\_JP\\_G.html?](https://www.europeana.eu/portal/en/record/2023901/ArcaSite_obj_ah2_MUHNAC_0002258_MB_IMG_web_JP_G.html?)

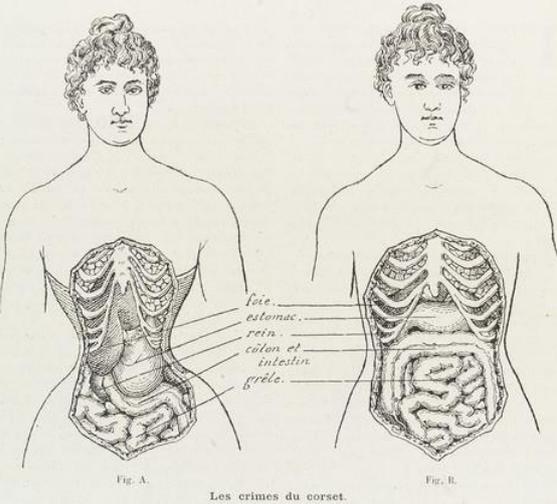
<sup>10</sup> G

[https://www.europeana.eu/portal/en/record/15601/4F12C3D54B0DBC8D912825DBED99FCE00AA76A\\_BC.html](https://www.europeana.eu/portal/en/record/15601/4F12C3D54B0DBC8D912825DBED99FCE00AA76A_BC.html)

Item H.<sup>11</sup>

Skaters and golf-players on the ice,  
c.1615 - 1634

Schaatsers op het ijs; links een man die  
een slede voortduwt, rechts een  
kolfspeler. Rijksmuseum

Item I.<sup>12</sup>

Illustrations to denounce the crimes of  
the corset and how it cripples and  
restricts the bodily organs in women,  
1908.

Lettering: Les crimes du corset On voit  
comment les organes, qui sont a leur  
place normale sur la figure B, sont  
deplaces et deformes en A, sous  
l'influence du corset.

<sup>11</sup> H

[https://www.europeana.eu/portal/en/record/2064107/Museu\\_ProvidedCHO\\_Nottingham\\_City\\_Museums\\_and\\_Galleries\\_BLDIDNA005871.html?](https://www.europeana.eu/portal/en/record/2064107/Museu_ProvidedCHO_Nottingham_City_Museums_and_Galleries_BLDIDNA005871.html?)

<sup>12</sup> I

[https://www.europeana.eu/portal/en/record/122/https://www.searchculture.gr/aggregator/edm/ELIA\\_000100\\_22\\_439555.html](https://www.europeana.eu/portal/en/record/122/https://www.searchculture.gr/aggregator/edm/ELIA_000100_22_439555.html)

Item J.<sup>13</sup>

Gázló, 1672, Szépművészeti Múzeum

Item K.<sup>14</sup>

Malerei aus Herculaneum mit Darstellung einer maritimen Ansicht

Erhaltungszustand: Die Malerei zeigt z.T. starke Verwitterungsspuren und Fehlstellen, v.a. im Randbereich. Ein großer Riss verläuft diagonal im linken Bild Drittel. Ebenda und auf der rechten Bildseite sind weitere Risse feststellbar.

### Questions about the interface and metadata

How useful would it be for you if the search results can be presented on a map?

How useful would it be for you if the search results can be presented on a timeline?

---

<sup>13</sup> J

[https://www.europeana.eu/portal/en/record/2021672/resource\\_document\\_mauritshuis\\_121.html?](https://www.europeana.eu/portal/en/record/2021672/resource_document_mauritshuis_121.html?)

<sup>14</sup> K

[https://www.europeana.eu/portal/en/record/2048709/object\\_HA\\_1045.html](https://www.europeana.eu/portal/en/record/2048709/object_HA_1045.html)

How useful would it be for you if the search results can be filtered per source type?

How useful would it be for you if the search results can be filtered per organisation?

How useful would it be for you if the search results can be filtered per country?

How useful would it be for you if the search results can be filtered per historical period?

5 'this or that' questions were asked about the importance of various types of information.

Which information is more important for you when you search for a source?

The place where a source is made	OR	The place that the source is about.
The person who made the source	OR	The person that the source is about
The date that the source was created	OR	The historical period that the source is about.
The original text of the source	OR	The (English) translation of the source
The original text of the source	OR	The description that accompanies the source

The theme in all these questions is: Origin or Content? Should the information refer to the content of the source or to the physical manifestation of the item itself? The answer to this question can change the way we perceive metadata in the field of History.

To underline the importance of this question, I am drawing a well-known example from Classical Literature: Notre Dame. Victor Hugo writes in 1830, however the story unravels in 1480 providing an immense amount of accurate descriptions for 1480: clothes, pieces of furniture, professions, housework, and, of course, specialised chapters on architectural developments from 12<sup>th</sup> to 15<sup>th</sup> century. In this case, if we perceive the book in its physical manifestation it should be saved under 1830. If we are interested in it as a historical source, it is more relevant to 1480.

This is, for sure, a peculiarity of the science of History regarding taxonomy. The rest of the sciences who study cultural heritage, for example Art and Literature, are interested in the Origin-based data, whereas historians predominantly need the Content-based data.

## Conducting the survey

Since the main part of the survey was arranging 14 sources in the order of preference, and explaining the selection, it was preferred to keep it in face to face meetings. We opted for more focused answers, rather than a big amount of them.

Last but not the least, we will actively encourage people to participate in the survey during the following events:

- Europeana AGM, 27 November 2019.
- Thematic seminar in Brussels, 22 November 2019
- Europeana DSI4 Learning Team.
- Sharing European Histories meeting, 7-9 February 2019

It is important to maximise the time period during which the survey is open, since this equals more participants and thus more reliable results. The proposed date to close the survey is February 15<sup>th</sup>. This way the 'Sharing European Histories' meeting will be included as an opportunity to inform people about our survey. Then, the assessment period will take place during February 15<sup>th</sup>-March 15<sup>th</sup>.

## Assessment of the responses

### Assessing Representativeness

The participants' personal pieces of information were processed in order to confirm that we achieved an accurate representation of the educational community in the survey, according to the criteria defined in the 'Sampling' section of this document.

#### Size

We received 33 answers. Out of them 4 were only partially filled, and 4 were from people without teaching experience. The participants whose answers we processed were **25 people**.

#### Gender

Women	13
Men	12

Women account 52% of the respondents, which, according to our reasoning mentioned in 'Sampling' is satisfactory.

#### Variety of Countries

The people who answered the survey are working in a variety of countries. Geographical spread across Europe was secured, while we had two instances of answers outside Europe. Namely, the countries represented in the survey are the following, in alphabetical order: Belgium, Brazil, Bulgaria (3), Croatia, Czech Republic, France, Germany (2), Iceland, Italy (3), Netherlands, Portugal (3), Sweden (3), United Kingdom (3), United States.

#### Professions

Teachers	13
Professors	6
Museum Educators	5
Teacher trainer	1
Total	25

We consulted three professions related to history education: Teachers in Secondary Education, Professors in University, and Museum Educators. Out of 25 people, there are 13 teachers, 6 professors, 5 museum educators, and one teacher trainer.

#### Subjects of teaching

The majority of the respondents, 20 of them, teach history as their primary subject. However, 5 of them teach subjects that are closely related to History: Citizenship, Sociology, Cultural Heritage (2), History of Information and Science.

### Experience

The group of people who participated in this survey has extensive experience in teaching History, with an average of 15 years of experience. The minimum recorded experience was 3 years, and the maximum was 34 years. 23 out of 25 are active teachers, while 2 of them have retired.

Here is the full list with the participants' profiles, anonymised.

Participant	Profession	Students' age	Country where they work	From	To	Years	Subject	
1	BV	Professor	19-25	Bulgaria	1992	2020	28	Cultural Heritage
2	PN	Professor	19-25	Bulgaria	1986	2020	34	History of Law
3	-	Teacher	12-18	Portugal	1999	2003	4	History
4	BF	Professor	14-99	Italy	2010	2020	10	Book History
5	SS	Teacher trainer	22-99	Europe	2006	2020	14	History
6	NT	Teacher	11-14	Bulgaria	1994	2020	26	History
7	CI	Museum Educator	20+	Portugal	1990	2020	30	Sociology
8	-	Teacher	16-19	Iceland	1989	2020	31	History
9	CB	Museum Educator	10-26	Germany	2010	2020	10	Cultural Heritage
10	HS	Museum Educator	15-25	Brazil	2000	2020	20	Citizenship
11	SG	Professor	18-20	Portugal	2014	2020	6	Medieval
12	TF	Professor	18-22	Belgium	1993	2020	27	Cultural Heritage
13	CA	Museum Educator	15-25	Italy	2016	2020	4	Cultural history
14	-	Museum Educator	13-95	United Kingdom	2004	2020	16	History

15	-	Professor	17-25+	Germany	2017	2020	3	History of technology and Science
16	C	Teacher	16-19	United Kingdom	1972	2002	30	History
17	GG	Teacher	17-50	Netherlands	2002	2020	18	Cultural history
18	SH	Teacher	11-18	United Kingdom	1997	2020	23	History
19	MB	Teacher	11-17	France	2012	2020	8	History
20	DJ	Teacher	15-18	United States	2001	2017	16	History
21	NM	Teacher	14-15	Sweden	2011	2020	9	History
22	DD	Teacher	8-18	Croatia	2010	2020	10	History
23	-	Teacher	1-12	Sweden	2005	2020	15	History
24	RV	Teacher	11-24	Czech Republic	2007	2020	13	History
25	BS	Teacher	7-12	Sweden	2009	2020	11	History

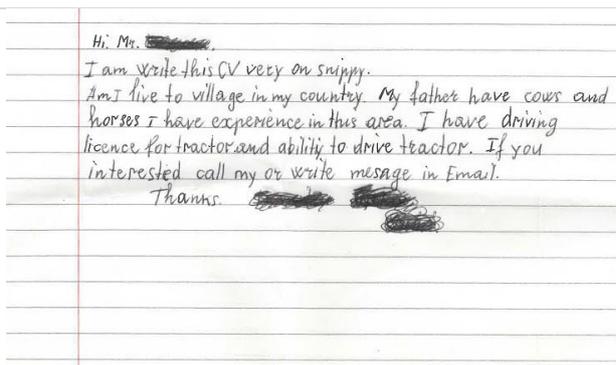
## The responses

### Responses about Europeana sources

The following items were marked as top 3 to be used for educational purposes, out of 10 in total. Namely, 'Munition workers in a shell warehouse at National Shell Filling Factory No.6, Chilwell, Nottinghamshire in 1917' was among the first three choices of 49% of the respondents; 'Letter looking for work' was among the first three choices of 31% of the respondents; 'Illustrations to denounce the crimes of the corset and how it cripples and restricts the bodily organs in women, 1908' was among the first three choices of 26% of the respondents.

**Item A.**

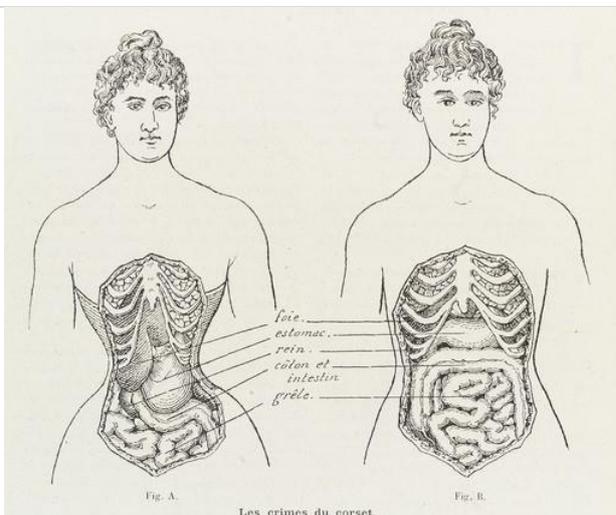
Munition workers in a shell warehouse at National Shell Filling Factory No.6, Chilwell, Nottinghamshire in 1917. This was one of the largest shell factories in the country © IWM (Q 30018)

**Item D.**

Letter looking for work. User contributed content, Europeana Foundation

'I was recently cleaning out my father's house and found this little letter.

It comes from a young man from Moldova who was looking for work on a farm in Ireland. He must have replied to an ad my father posted somewhere. My father is a farmer in county Galway. The letter reminded me of letters Irish people would have sent in the past, looking for jobs in England or America.'

**Item I.**

Illustrations to denounce the crimes of the corset and how it cripples and restricts the bodily organs in women, 1908.

Lettering: Les crimes du corset On voit comment les organes, qui sont a leur place normale sur la figure B, sont deplaces et deformes en A, sous l'influence du corset.

To understand the respondents' choices, it is crucial to see what the unique characteristics of these sources are, in other words what is it that makes them suitable for teaching while other items are not. First, they are all accompanied by relevant textual information, which provides historical background or explanation. Curation remains the most decisive factor; we need to grasp the historical context of an item in order to use it as a historical source.

Furthermore, these three choices give us insight on the preferences regarding topic. The topics that the history teachers use fall under two broad categories; alignment to the curriculum and relatability. This means that a source can have educational value in two different ways. First, it can be related to the subjects that are used in schools, in which case they act as support material, making a difficult subject easier to understand it and remember it. Second, a source can be used to address current issues a student might be facing, by showing negative or positive human experiences that are present throughout centuries. These type of sources are used in cases where history is used to explain a current phenomenon.

For example, the most popular topics in Europeana's collections for educational purposes were: World War I, Migration, and Fashion. World war I is a traditional course in History education, so this source would be used to support the existing lessons. On the contrary, Migration and Fashion are not found in the curricula. In this case, Europeana sources would enhance and broaden the topics in History lessons. All in all, if we attempted to outline the properties which an imaginary ideal source has, we could conclude in the following:

- a. Association to the historical content that is being taught in schools
- b. Adequacy of information related to the source, which makes the teacher confident that he is able to present it in classroom
- c. Comprehensibility
- d. Appearing to be interesting, addressing current issues
- e. Ability to gain students' attention thanks to its visual appeal.

Then, participants wrote which words they would type if they knew a source and wanted to find it back. In another question they wrote the historical terms with which they associate this source. This means that, if they needed material to cover a lesson on these historical terms, they would want to include this source. Keep in mind that each teacher filled these questions for his top picks, so it is sure that they find these items interesting. Please see the table with the answers below.

The problem is that if the teacher does not already know the existence of the given source, they cannot type the keywords of the second column, 'Terms that describe the individual source'. This means that in order for them to make use of this available source, it would need to appear in his search results if he searched the terms of the third column 'Historical terms in which this source should appear as a result'.

Item	Terms that describe the individual source	Historical terms in which this source should appear as a result
A	world war I, arms factory, WW I, munition workers, World war I, weapon	I world war, Industrialization of armament, II World wars in Europe, WW

	making, women, munitions, Factory, Chilwell, Weapon industry, mass production, factory workers 1900-1920, 1917 Nottinghamshire, shell factory workers, munitionette, shell factory, munition	I, work of women, suffrage, Labour economy, Armament, war technology, Social revolution, advance of women, industrial revolution, industrial conflict, mass production, women emancipation, everyday life and work
I	Health, human rights, fashion, corset reform, drakt reform, corset, gender, women, medical scene 20th century, women's bodies, early 20th century, Victorian female fashion, women's night fashion, corsets, female, harm body	first wave feminism, suffrage movement, reform clothing, gender roles, breakthrough of modern society, change and continuity, women's history, rights movements, health, patriarchy, women's rights, cultural change
D	ways to ask a job, personal letters migration, job application, Ireland, migrant workers, Agriculture, tractor, Farming, CV letter	Crisis, Migration, repetition in history, causes for change of life, labour conditions, push and pull factors, migration waves, European integration, changing definitions of Europe/ Europeans, opportunities, changes
B	1790, map, turkey, Eastern Europe, map of ottoman empire	fluidity of borders, ottoman and Balkan history, joseph II, war with Turkey, Habsburg, Turkish-Russian war 1787-1792, history of press, development of states, change in Europe's borders, Europe around 1800, Europe as the 'other', war, diplomacy
E	illuminated manuscript of king David, medieval music, nature of David	religion of Jews, role of religion in middle age, scriptories, monastic libraries, middle ages, medieval music

We notice that the words in the third column are more in amount, with a higher degree of abstraction.

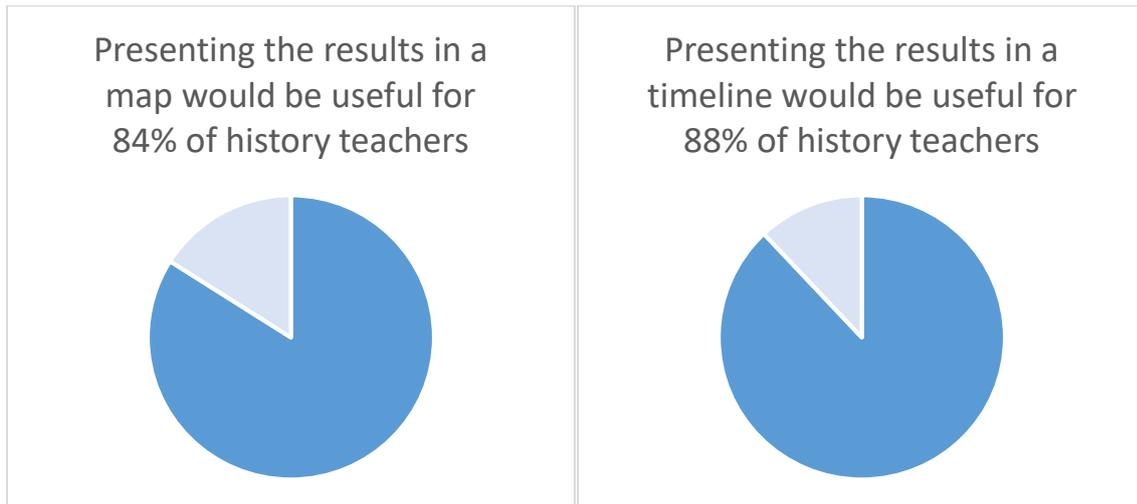
In the reasons why people would not use a source the common answers are: bad quality of the image, lack of information, not related to subject.

### Responses about the interface and metadata

Way of presenting the results

84% of the respondents said that it would be useful if the results were presented in a map.

88% of the respondents said that it would be useful if the results were presented in a timeline.



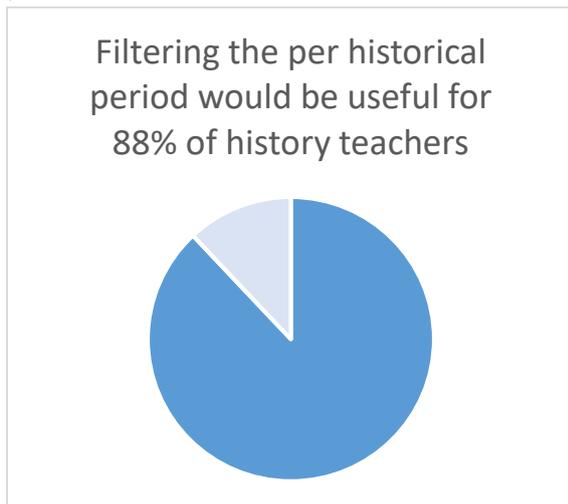
#### Ways of filtering the results

64% of the respondents said that it would be useful if the results could be filtered per organisation.

96% of the respondents said that it would be useful if the results could be filtered per source type.

96% of the respondents said that it would be useful if the results could be filtered per country.

88% of the respondents said that it would be useful if the results could be filtered per historical period.

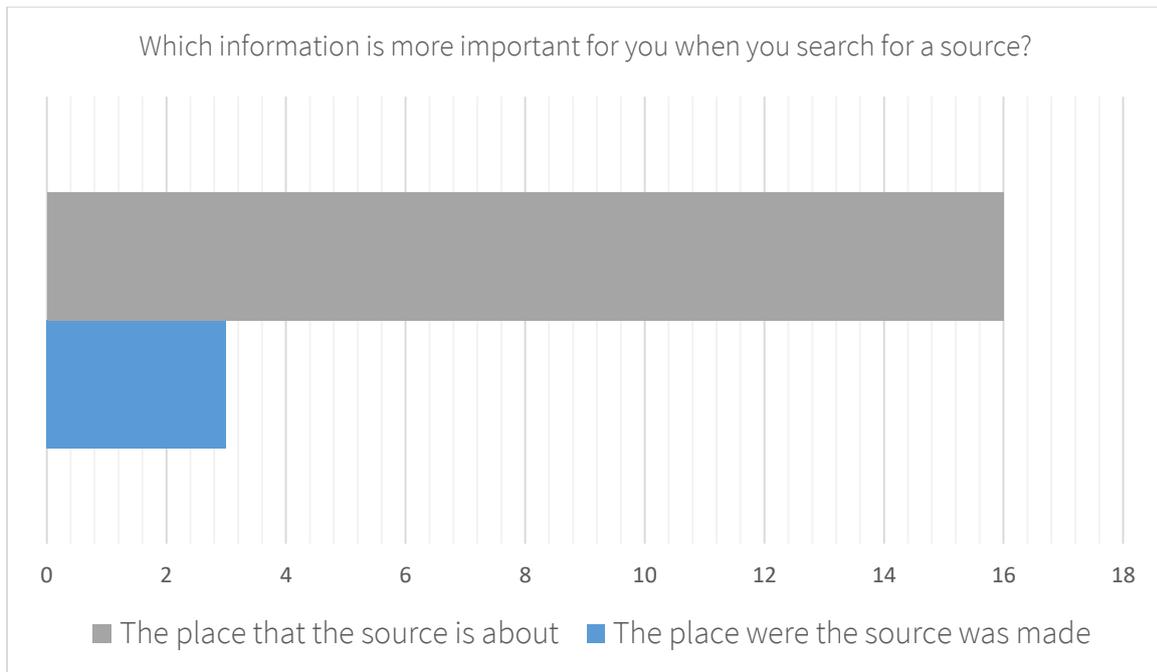


#### Metadata

'This or that' questions. The participants were inclined in favour of Content-based data. Namely:

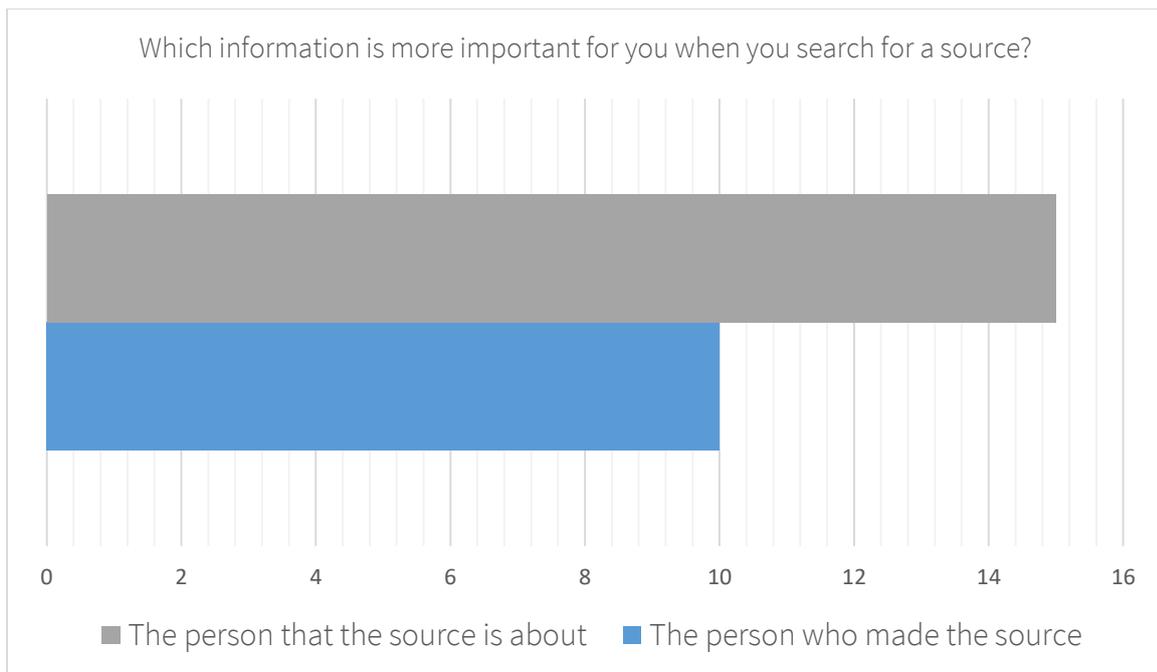
16% of the respondents said that, when searching for a source, the place where the source was made is more important.

84% of the respondents said that, when searching for a source, the place that the source is about is more important.



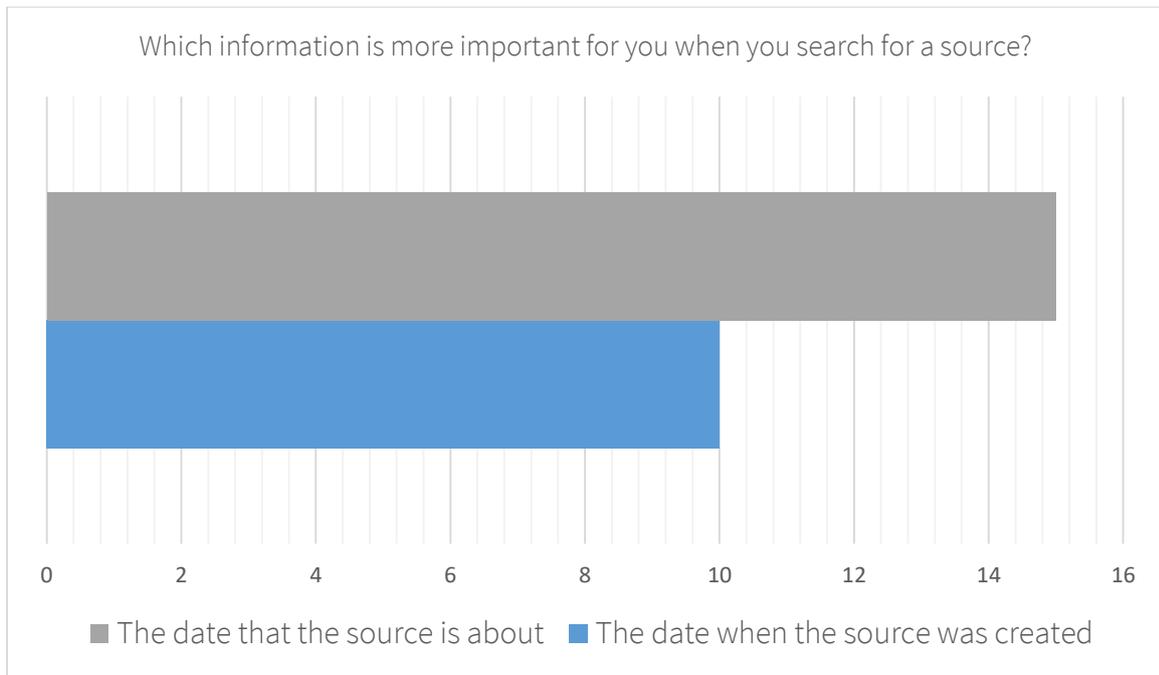
60% of the respondents said that, when searching for a source, the person that the source is about is more important.

40% of the respondents said that, when searching for a source, the person who created the source is more important.



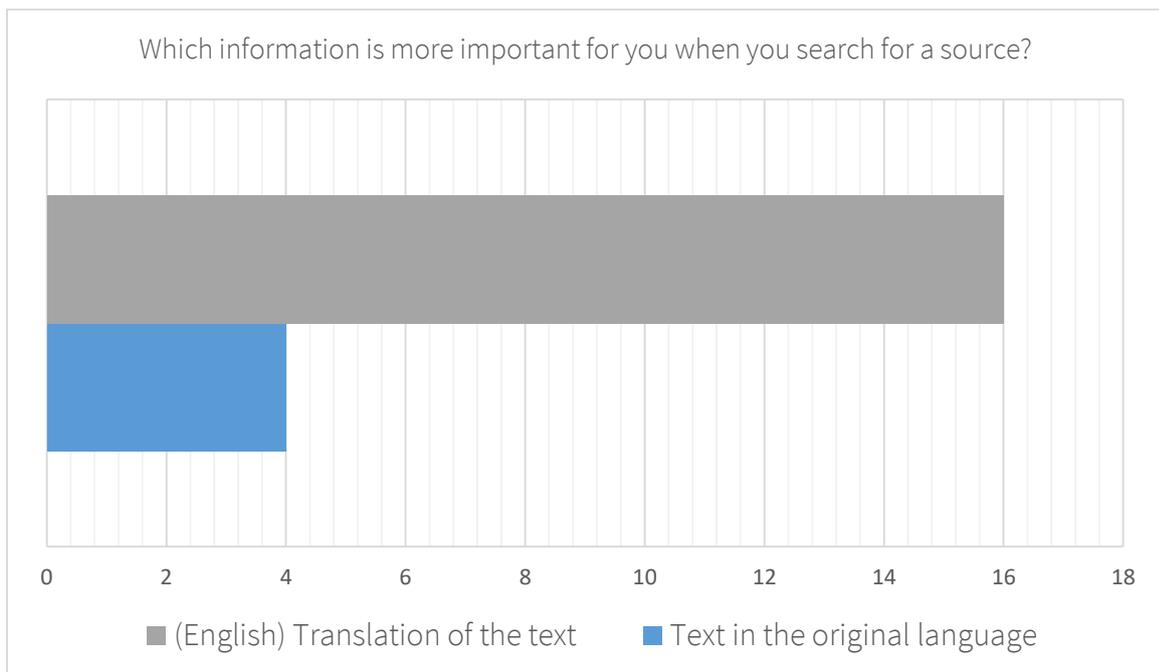
60% of the respondents said that, when searching for a source, the date that the source is about is more important.

40% of the respondents said that, when searching for a source, the date when the source was created is more important.



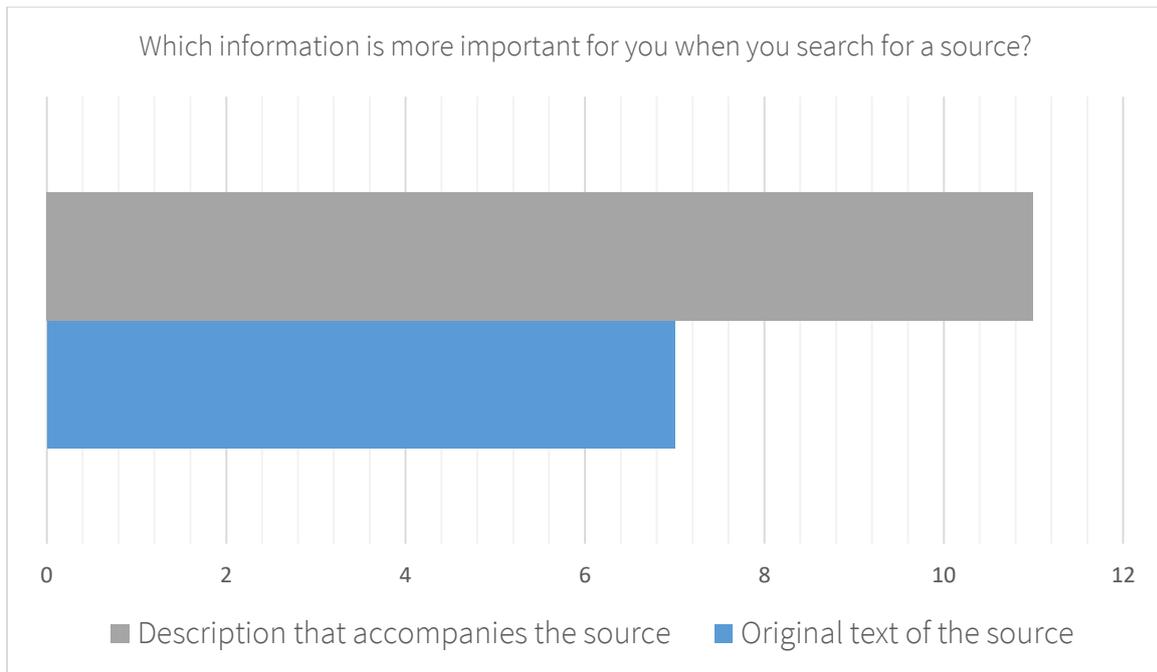
80% of the respondents said that, when searching for a source, the (English) translation of the source is more important.

20% of the respondents said that, when searching for a source, the original text is more important.



39% of the respondents said that, when searching for a source, the original text is more important.

61% of the respondents said that, when searching for a source, the description that accompanied the text is more important.



Some respondents selected both options, to show that these pieces of information are both necessary. Their answers were not processed so you will notice that in some cases the total amounts do not add up to 25 people. These votes were not included here. To move forward with this irregularity, we should keep in mind that the Origin-based options (as explained in Methodology) are already secured in Europeana, whereas the Content-based options are not available. So, people who expressed that the two qualities are equally important, would support the addition of Content-based data.

## Findings

- Items with adequate, comprehensible descriptions are 58% more likely to be included in a lesson. Out of the sources that the teachers selected, 79% had a long, meaningful, and easy to understand accompanying text, whereas 21% had not.
- The search keywords that the history teachers use are more abstract than the words that are found in the descriptions.
- If an item has an adequate, comprehensible description, a history teacher can identify related historical concepts in short time.
- Interactive ways of presenting the search results, namely in a Map and in a Timeline, are highly recommended by the educational community.
- Europeana's existing filters are highly useful for teachers.
- An additional filter to search by historical period would be beneficial for 88% of history teachers.
- 96% of history teachers find filtering by country useful. However, 84% of them explain that, they need to search the place that the source refers to, not the place of origin.
- Metadata regarding time, place, and people, have to reflect the content of the source, not the item itself as an object, in order to maximise their effectiveness in the study of History.

## Conclusions

- Europeana items need adequate, comprehensible descriptions to be used as historical sources.
- Search Engine Optimisation should take under consideration the search behaviour of historians and their specific needs.
- It needs to be clear if the metadata refer to the content of the source, or to the item itself as an object.
- The filters that have been developed in Europeana already are highly useful.
- There is a great amount of curation, editing, and developing that can be done to unravel the full potential of the digital collections, and to maximise the interdisciplinary connection among History, Education, and Art.

## Recommendations for further research

A textual Data Analysis on the relationship between the words that describe individual sources on the one hand, and the terms of historical concepts on the other hand, can produce results that could help in generating automatically historical terms from tags. Text mining methodologies such as the PolMine project<sup>15</sup> could be implemented to find co-occurrences.

For example, let's assume a source that has the word 'axe' in its description, and 12<sup>th</sup> century, England in its metadata. If we identify a word family of agricultural tools and calculate with which historical concepts they are related, according to the time period, we could automatically assign the term 'Serfdom' to this item.

Ultimately, it would be nice if further research focuses on making use of the metadata we already have (Place, Time, tags) and find combinations of those that can produce further information.

---

<sup>15</sup> <https://polmine.github.io/>