

## Bringing qualitative data to life through online access and citation

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### Introduction

The UK Data Service (UKDS) makes available collections of primary research data to social scientists. It has around a 1000 records relating to qualitative data and mixed methods collections that include transcribed interviews, original survey questionnaires, open-ended questions and essays and photographs. These can be found using the **Data Catalogue**, which holds a detailed metadata record for each study/collection and enables download of the whole data collection (Figure 1).

Figure 1: A UKDS Data Catalogue record for a qualitative data collection

The screenshot shows a web page titled 'Catalogue' with a breadcrumb 'Discover > Catalogue'. Below the title, it says 'UK Data Service data catalogue record for: Family Life and Work Experience Before 1918, 1870-1973'. There are links for 'Documentation', 'Related Studies', 'Publications', 'Download/Order', and 'Get full DDI XML'. The 'TITLE DETAILS' section lists: SN: 2000; Title: Family Life and Work Experience Before 1918, 1870-1973; Alternative title: Edwardians, 1870-1973; Persistent identifier: 10.5255/UKDA-SN-2000-1; Depositor: Thompson, P., University of Essex. Department of Sociology; Principal investigator(s): Thompson, P., University of Essex. Department of Sociology; Lummis, T., University of Essex. Department of Sociology; Sponsor(s): Economic and Social Research Council. The 'SUBJECT CATEGORIES' section lists: Economic history - History; Family life and marriage - Social stratification and groupings; General - Employment and labour; Population history - History; Social history - History. The 'ABSTRACT' section contains two paragraphs of text describing the study.

While many datasets can be downloaded, content cannot be interrogated until the individual data has been downloaded. In 2014, the **Digital Futures** project built and launched **QualiBank**, an enhanced and user-friendly platform for publishing, presenting and searching the content of qualitative data. The QualiBank system offers a streamlined data publishing workflow for data files and metadata marked-up with known schemas.

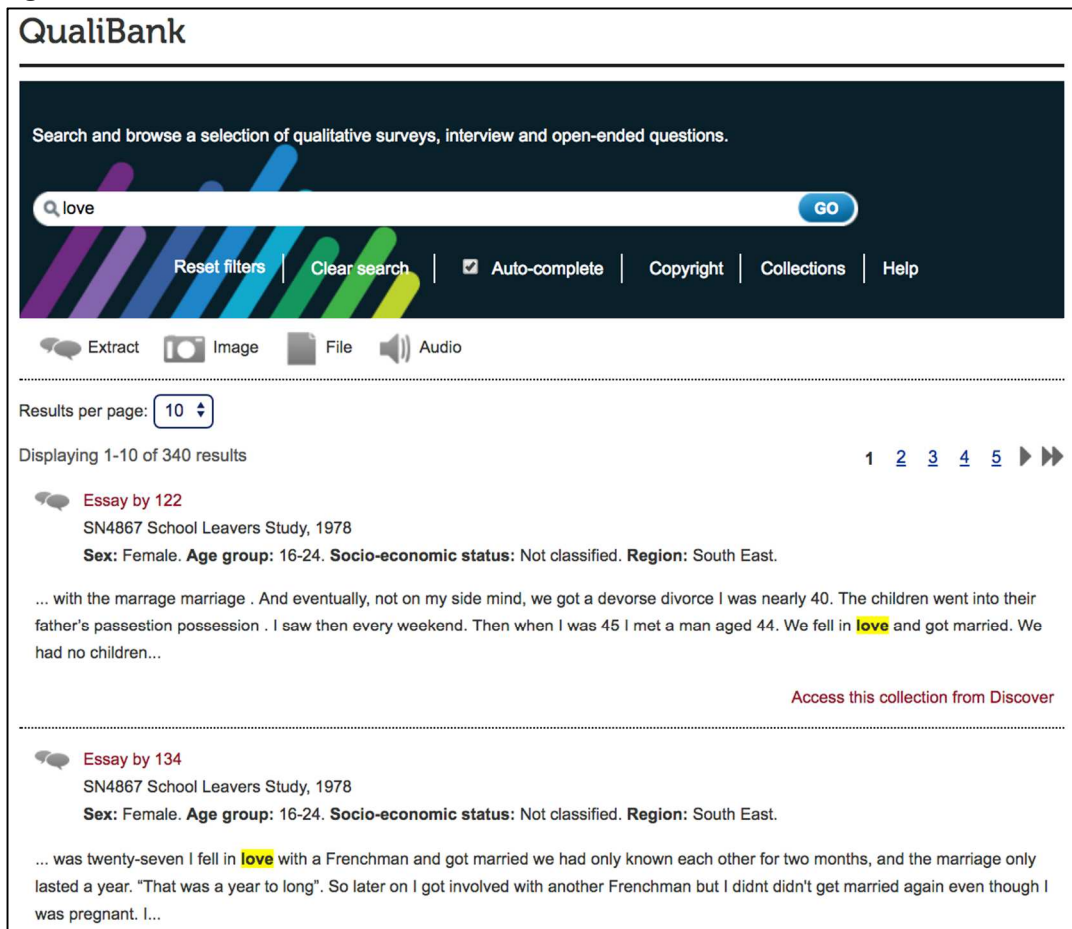
### QualiBank functionality

For designing the system, key requirements were that qualitative data should be easily discoverable, retrievable, could be examined in context, and cited in a robust way. The UK QualiBank (<https://discover.ukdataservice.ac.uk/QualiBank/>) offers a search and browse

interface allowing searching and retrieval of the content of textual files and of the metadata attached to these objects, such as a description of an image or of an audio recording. It enables hyperlinking to related objects and includes a persistent citation feature enabling users to select a whole text or an extract of the text.

Faceted browsing allows user to filter and refine their search or browse, with facets representing a minimal core of attributes for qualitative interviews. Summary metadata is displayed below the title of the object (e.g. in Figure 2, Interview with Mr Patridge). Where search terms appear in a text object (interview transcripts and so on) they are highlighted in the text in yellow.

Figure 2. QualiBank search results



Linked resources (e.g. text, audio and images) are identified by a unique icon. Target pages, such as an interview transcript, display core metadata and view additional metadata (+) and a link to open a non-textual file (Figures 3a and b).

Figure 3a Interview metadata from qualitative text in the UK QualiBank

You are not logged in | [Login to QualiBank](#) | [Site Search](#) [FAQ](#) [Help](#) [Contact](#)

UK Data Service Discover

[About us](#) [Get data](#) [Use data](#) [Manage data](#) [Deposit data](#) [News and events](#)

Discover > QualiBank > Document

## Interview with Mr. Partridge

[External resources](#) | [Collection documentation](#) [Access this collection from Discover](#)

**Discover**

**Variable and question bank**

- QualiBank

**Create citation**

**DETAILS**

**Collection ID (SN):** 2000  
**Title:** [Family Life and Work Experience Before 1918, 1870-1973](#)  
**Principal investigator:** Thompson, P., University of Essex. Department of Sociology  
 Lummis, T., University of Essex. Department of Sociology  
**Sex:** Male  
**Age group:** 65-74  
**Socio-economic status:** Lower supervisory/technical  
**Region:** East of England  
**Licence:** [Creative Commons Attribution 4.0 International License](#) 

**Additional metadata**

**INTERVIEW TRANSCRIPT**

**I:** Could I ask your name and present address please?

Figure 3b Interview text from qualitative text in the UK QualiBank

**INTERVIEW TRANSCRIPT**

**I:** Could I ask your name and present address please?

**R:** John Percy Partridge, 11 King George Avenue, East Tilbury.

**I:** And your marital status, you have been married?

**R:** Married twice.

**I:** Could you give me the year of your marriage?

**R:** 1926. That was the first one. 1951, the second one.

**I:** And your year of birth?

**R:** 1902.

**I:** And the place you were born?

**R:** Camden Town.

**I:** Do you know the address?

**R:** Kings Road I believe it was.

**I:** How many years did you live in Kings Road, Camden Town?

Materials related to a text object such as audio, images, or web resources are also clearly displayed.

### Citation functionality


Users can select an extract of text, based on one or more consecutive paragraphs and dynamically retrieve a citation, which can be pasted into any outputs, as in Figure 4.

Figure 4 On-the-fly citation created for an extract from qualitative text in UK QualiBank

**Cancel**

4 extracts selected

**RETRIEVE CITATION**

**Collection ID (SN):** 2000  
**Title:** Family Life and Work Experience Before 1918, 1870-1973  
**Principal investigator:** Thompson, P., University of Essex. Department of Sociology  
 Lummis, T., University of Essex. Department of Sociology  
**Sex:** Female  
**Age group:** 75-84  
**Socio-economic status:** Routine  
**Region:** North West  
**Licence:** [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International Licence](#) 

The citation URI created takes the user back into the quoted extract (highlighted in green) in QualiBank, unless the data is Safeguarded and needs a login (Figure 5).

*Figure 5 Citation of an interview extract in QualiBank*

Citation ✕

---

A unique citation reference has been generated based on your selection.

Thompson, P., University of Essex. Department of Sociology, Lummis, T., University of Essex. Department of Sociology: "Interview with Mr. Patridge" in "Family Life and Work Experience Before 1918, 1870-1973" 7, UK Data Service [distributor], 2009-05-12, SN:2000, Para. 318-326.  
<http://dx.doi.org/10.5255/UKDA-SN-2000-1>.

**Select the text above**

You can copy and paste this citation as required in your outputs. This citation includes a URL which will link directly back to this page, where the cited text will be highlighted.

**Show preview of citation URL in action**

## Metadata requirements

The ability to provide context for data objects requires sufficient descriptive metadata and metadata must also capture relationships between objects in a collection, so that a system can display all the relevant information about an object. A typical example might be to:

- display the text of an interview transcript on a web page with links available to explore the associated audio or video and other external links;
- examine the metadata about the interview, e.g. the speaker and various attributes;

To prepare materials for the system, data must be highly structured and consistently marked-up. Destination formats for data in the system are: text files as XML; handwriting/photos/pictures images as JPEG; multipage non-XML document images as PDF; and audio as MP3. QualiBank exploits known technologies and utilised three standardised metadata schema:

1. **The Data Documentation Initiative (DDI)<sup>1</sup>** - an open international standard for describing the data produced by surveys and other observational methods in the social, behavioral, economic, and health sciences, used by all national social science data archives around the world. In the system, DDI Codebook 2.5 is used to capture basic collection or 'study'-level catalogue metadata';
2. **Qualitative Data Exchange (QuDEx)<sup>2</sup>** – an XML schema maintained by the author at the UKDS that preserves annotations of, and relationships between, data, parts and segments of data and other related objects in a qualitative data collection; and is a baseline data exchange model for the archiving and interchange of data and metadata. A simple MS SharePoint tool is used to enter metadata in a tabular format (Figure 6). In QualiBank it is used for rich file-level description and intra-collection relationships (Figure 7).

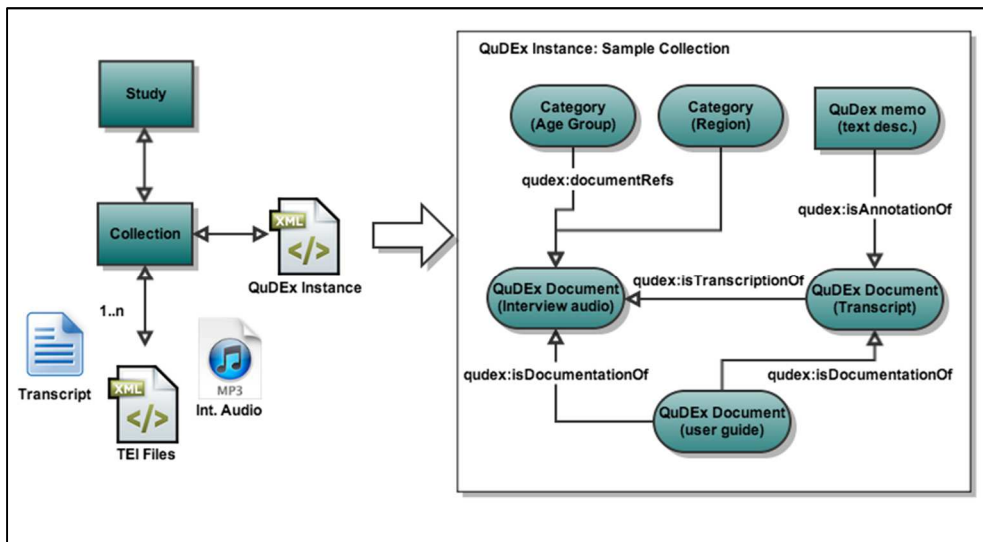
Figure 6. Simple MS Sharepoint metadata entry tool for QualiBank

Collection	Title	Resource Type	Filename	File Location	File Location Type	File MIME type	cat:sdno	cat:Number of Pages	cat:Region	cat:County	cat:Place Name	cat:Occupation(ONS class)	cat:Occupation
The Edwardians	Interview with Mr. Keble	other: Interview transcript	2000int001	2000int001.xml	other: BaseX	text/xml	2000int001	55	East of England	Essex	Colchester	Semi-routine	Elementary occ
The Edwardians	Interview with Mr. Stinchcombe	other: Interview transcript	2000int002	2000int002.xml	other: BaseX	text/xml	2000int002	109				Semi-routine	Elementary occ
The Edwardians	Interview with Mrs. Duckers	other: Interview transcript	2000int003	2000int003.xml	other: BaseX	text/xml	2000int003	78	London	Greater London area	London	Routine	Elementary occ
The Edwardians	Interview with Mr. Knifon	other: Interview transcript	2000int004	2000int004.xml	other: BaseX	text/xml	2000int004	74	London	Greater London area	London	Routine	Skilled trades occupations
The Edwardians	Interview with Mr. Troy	other: Interview transcript	2000int005	2000int005.xml	other: BaseX	text/xml	2000int005	85	London	Greater London area	London	Semi-routine	Elementary occ
The Edwardians	Interview with Mrs. Crag	other: Interview transcript	2000int006	2000int006.xml	other: BaseX	text/xml	2000int006	61	London	Greater London area	London	Semi-routine	Skilled trades occupations
The Edwardians	Interview with Mrs. Wilson	other: Interview transcript	2000int007	2000int007.xml	other: BaseX	text/xml	2000int007	73	London	Greater London area	London	Routine	Elementary occ
The Edwardians	Interview with Mr. Rook	other: Interview transcript	2000int008	2000int008.xml	other: BaseX	text/xml	2000int008	82	London	Greater London area	London	Routine	Elementary occ
School Leavers Study	Image relating to Essay by 1	image	4867ess001	4867ess001.jpg	url	image/jpeg	4867ess001		South East	Kent	Isle of Sheppey	Not classified	Student
School Leavers Study	Essay by 1	other: Essay	4867ess001	4867ess001.xml	other: BaseX	text/xml	4867ess001		South East	Kent	Isle of Sheppey	Not classified	Student
School Leavers Study	Image relating to Essay by 2	image	4867ess002	4867ess002.jpg	url	image/jpeg	4867ess002		South East	Kent	Isle of Sheppey	Not classified	Student
School Leavers Study	Essay by 2	other: Essay	4867ess002	4867ess002.xml	other: BaseX	text/xml	4867ess002		South East	Kent	Isle of Sheppey	Not classified	Student
School	Image	image	4867ess003	4867ess003.jpg	url	image/jpeg	4867ess003		South	Kent	Isle of	Not classified	Student

Figure 7. Use of QuDEx metadata in QualiBank

<sup>1</sup> Data Documentation Initiative (DDI): <https://www.ddialliance.org/>

<sup>2</sup>Qualitative Data Exchange Format (QuDEx): <http://www.data-archive.ac.uk/curate/standards-tools/metadata?index=2>



- **Text Encoding Initiative (TEI)**<sup>3</sup> - a standard for the representation of texts in digital form. QualiBank makes use of a limited bespoke set of TEI XML elements from a massive schema for structural mark-up of text: headers, speaker turn-taking, defining paragraphs and inline corrections and errors (see Figure 8).

Figure 8. QualiBank interview marked up in in TEI

```

1 <?xml version="1.0" encoding="utf-8"?>
2 <TEI xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.tei-c.org/ns/1.0 http://www.tei-c.org/release/xml/tei/custom/schema/
3 <teiHeader>
4 <fileDesc>
5 <titleStm
6 <title type="collectiondisplaylabel">100 Families</title>
7 <title type="sourcedisplaylabel">Interview with Mrs. Angus</title>
8 </titleStm
9 <publicationStm
10 <idno type="qudexcollection">q-d68c3767-d507-4e80-8910-b29a8421f629</idno>
11 <idno type="qudexsource">q-da978903-t722-47c0-996c-0996090ed2a</idno>
12 <idno type="qudexdocument">q-6a3e707a-2b18-4b4c-b3de-8a56d81cd7a1</idno>
13 </publicationStm
14 <sourceDesc>
15 <p>Families, Social Mobility and Ageing, an Intergenerational Approach, 1900-1988</p>
16 </sourceDesc>
17 </fileDesc>
18 </teiHeader>
19 <text>
20 <body>
21 <u xml:id="q-2e5b40aa-a9f3-e211-b501-000bdb5cc6d5" who="I" n="1">Can you remember anything about your grandparents?</u>
22 <u xml:id="q-2f5b40aa-a9f3-e211-b501-000bdb5cc6d5" who="R" n="2">Yes, I remember my grandmother very well and my grandfather.</u>
23 <u xml:id="q-305b40aa-a9f3-e211-b501-000bdb5cc6d5" who="I" n="3">Is that your father's or your mothers?</u>
24 <u xml:id="q-315b40aa-a9f3-e211-b501-000bdb5cc6d5" who="R" n="4">No, not my father's, 'cos I had a stepfather. I do remember his mother, you know.
25 <u xml:id="q-325b40aa-a9f3-e211-b501-000bdb5cc6d5" who="I" n="5">What can you remember about her?</u>
26 <u xml:id="q-335b40aa-a9f3-e211-b501-000bdb5cc6d5" who="R" n="6">You mean what she looked like and yeah, she was a very tiny lady. Very prim and ps
27 <u xml:id="q-345b40aa-a9f3-e211-b501-000bdb5cc6d5" who="I" n="7">Do you remember her as being very old or anything?</u>
28 <u xml:id="q-355b40aa-a9f3-e211-b501-000bdb5cc6d5" who="R" n="8">Oh yes, she was old. Well she seemed old to me then, you know, because she was tin
29 <u xml:id="q-365b40aa-a9f3-e211-b501-000bdb5cc6d5" who="I" n="9">Do you know how old she would have been when she died?</u>
30 <u xml:id="q-375b40aa-a9f3-e211-b501-000bdb5cc6d5" who="R" n="10">No, I don't, honestly. 'Cos she was very sick in hospital. I went to visit her.
31 <u xml:id="q-385b40aa-a9f3-e211-b501-000bdb5cc6d5" who="I" n="11">Do you know how old you were when she died?</u>
32 <u xml:id="q-395b40aa-a9f3-e211-b501-000bdb5cc6d5" who="R" n="12">I must have been about 15 I should imagine. Round about that. 15 16.</u>
33 <u xml:id="q-3a5b40aa-a9f3-e211-b501-000bdb5cc6d5" who="I" n="13">Did you go to her funeral?</u>
34 <u xml:id="q-3b5b40aa-a9f3-e211-b501-000bdb5cc6d5" who="R" n="14">Yes, it was cremation.</u>
35 <u xml:id="q-3c5b40aa-a9f3-e211-b501-000bdb5cc6d5" who="I" n="15">Can you remember anything about it?</u>
36 <u xml:id="q-3d5b40aa-a9f3-e211-b501-000bdb5cc6d5" who="R" n="16">Well, that was I think no, it was my first one that I ever went to. I can remem
37 <u xml:id="q-3e5b40aa-a9f3-e211-b501-000bdb5cc6d5" who="I" n="17">Were there many people there?</u>
38 <u xml:id="q-3f5b40aa-a9f3-e211-b501-000bdb5cc6d5" who="R" n="18">There were quite a few. A lot of her customers and that.</u>
39 <u xml:id="q-405b40aa-a9f3-e211-b501-000bdb5cc6d5" who="I" n="19">What about the other grandparents. What can you remember about them?</u>

```

## Technologies in use

QualiBank uses a range of commonly used technologies for web interfaces that enables searching and retrieval of data and metadata, including:

- BaseX for metadata and textual data storage and retrieval

<sup>3</sup> Text Encoding Initiative (TEI): <http://www.tei-c.org/>

- file server for non-XML docs
- simple QuDEX metadata data entry tool: Sharepoint
- C# scripts to process and validate against XML schemas
- Oxygen for manual mark-up
- Solr indexes used for faceted browsing and TEI text highlighting
- Xquery on BaseX for object metadata, text utterances and related materials
- GUID generator SQL database for QuDEX and TEI elements
- user interface in-house technologies, .NET and RESTful web services/APIs

The fine-grained within-system citation is made possible due to the use of randomly generated GUIDs to uniquely identify data collections, collection objects (an interview) and parts of objects (e.g. paragraphs).

The technologies used create a powerful interface that deals very well with large quantities of qualitative data. The system avoids the use of hard-coding of hyperlinks across data objects, so often found in multi-media archive and museum systems, making data publishing a much more straightforward process, and accommodating changes far more easily.

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<i>4 QualiBank</i>	<i>On-the-fly citation created for an extract from qualitative text in UK</i>	UK Data Service, 2018
Figure 5	<i>Citation of an interview extract in QualiBank</i>	UK Data Service, 2018
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