

Introducing the UK Data Service QualiBank

The UK Data Service QualiBank is an online tool for searching and browsing the contents of a selection of qualitative data collections held at the UK Data Service. The system complements the UK Data Service's Discover, where you can find over 5,700 data collections covering a wide range of social and economic data, spanning many disciplines and themes and including census data, as well as case studies and support guides.

What does the QualiBank do?

QualiBank is the UK Data Service's search and browse interface for qualitative data objects (text, audio and image files). You can find and retrieve extracts of textual data, audio files and images from a selection of qualitative data collections. The system allows searching of the content of text files, such as interviews, essays, open-ended questions and reports. It also allows searching of metadata attached to these objects, such as a description of a photo or of an audio recording, and it enables hyperlinking to related objects. A persistent citation can be made for selected extracts of data, such as an interview quote. Some collections are completely open while some are behind the UK Data Service access gate.

QualiBank uses faceted browsing or filters that allow you to refine your search or browse. Filters include:

- Collection title
- Access (showing access conditions) to be implemented
- Resource type (type of object, such as interview transcript or image)
- Date (of coverage of the materials, not the dates of fieldwork)
- Sex
- Age group
- Socioeconomic status
- Region (to which the data refer)

Following a search or browse, the number of hits found is displayed at the top of the results list. A search may retrieve resources of different types and there is no limit to the maximum number of hits retrieved. Minimal metadata is shown below the title of the object (e.g. Interview with Mrs Omison). Where search terms appear in a text object (interview transcripts and so on) they are highlighted in the text in yellow.



Different types of resource are identified by a unique icon for text, audio and images placed next to the name of the retrieved hit.

To explore a hit, view simply click on the hyperlinked title, which will direct to a target page. Once on the target page, such as an interview transcript, the details are displayed, which consist of core metadata, the facility to open up and view additional metadata (click on +), and the object itself.

Interview w	ith Mrs. Omison					
Collection documentation	External resources	Access this collection from Discover				
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:	Female					
Age group:	75-84					
Socio-economic status:	Routine					
Region:	North West					
+ Additional metadata						
INTERVIEW TRAI	NSCRIPT	8				
R: 149 Lee Gate, Harwo	od, Bolton.					
I: And your marital state	us? You're a widow, are you?					
R: Yes.						
I: Can you tell me what	year you were married?					
R: June 18th, 1938.	June 18th, 1938.					
I: And the year when yo	ou were born?					
R: May 23rd, 1889.						
 May 2510, 1005. 						

Related materials such as audio, images, study documentation and web resources are also shown, highlighted in red on the top left hand side of the page under clickable headings such as 'Collection documentation' and 'External resources'. Data collections can be downloaded using the 'Access this collection' from Discover.



What data are in QualiBank?

There are only a few collections in the online browsing system so far, and these were selected following a consultation process for prioritisation. Input was gained from academic users and archivists to choose a variety of important collections, some of which required digital enhancement. A dedicated project selectively digitised a number of paper-based materials including: original survey questionnaires; open-ended questions; transcribed interviews; essays and photographs. Detailed metadata was prepared for the collections.

The UK Data Service has over 350 records relating to qualitative data and mixed methods collections. These can be found using our Discover portal, which holds a detailed metadata record for each study/collection and, where possible, enables download of the whole data collection. Use the link within Qualibank to 'Access this collection from Discover'.

QualiBank is intended to provide access to two kinds of data: open data and safeguarded data. In the first beta phase, from April 2014, the system provides access to a limited number of open data collections only. Data files available as open data are licensed under Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0). Safeguarded data files will be made available under End User Licence conditions to users registered with the UK Data Service.

Currently the following five collections are openly available in the system:

British Oral Archive of Political and Administrative History, 1920-1980

British Oral Archive of Political and Administrative History (BOAPAH) was a pilot project conducted in 1979-1980 which aimed to collect a systematic oral archive of interviews with key figures from politics, the civil service and the armed forces. Interviewees selected were predominantly former Permanent Secretaries or former Cabinet Ministers, and were asked questions relating to the period of their official life, concentrating on the post-war years. There are 29 interviews in total, with 14 of these being made available through Qualibank.

Morale and Home Intelligence Reports, 1941-1949

The Morale and Home Intelligence Reports are government documents containing rich descriptions of attitudes and opinions of soldiers and the UK public during WWII. These reports include summaries of the morale of British personnel in post-war Germany and the Mediterranean Theatre. They focus on various topics including confidence in commanding officers, the government and the war efforts, postal censorship, leisure and entertainment, and personal finances and leave. In addition to these reports of soldiers abroad, observations and summaries of informal interviews with English civilians conducted by UK intelligence officers are also included.

Poverty in the United Kingdom : a Survey of Household Resources and Standards of Living, 1967-1969

This study, conducted in 1968 by Peter Townsend, aimed to evaluate and assess relative poverty in the United Kingdom. The study collected comprehensive information on all forms of resources (including income and assets) and indicative information on deprivation

and style of living among a representative sample of the population of the United Kingdom. Although a quantitative study, these surveys include marginalia and paradata which have recently been reused in a qualitative project by Ros Edwards, 'Advancing Paradata'. A small sample of 100 surveys with marginalia has been digitised and is available for exploration through Qualibank.

Family Life and Work Experience Before 1918, 1870-1973

The Edwardians examined family life and work experience in the early twentieth century in Britain and contains over 450 oral histories of individuals from this time period. Paul Thompson, the investigator, recognised that there existed little direct evidence of life during this period from a working class point of view and that such material would be highly valuable. The interviews were undertaken in the late 1960s and early 1970s and formed the basis of the first national oral history project in the UK.

School Leavers Study, 1978

The School Leavers Study is a collection of 141 essays written by school children from the Isle of Sheppey in 1978. Ray Pahl, the principal investigator, asked teachers in a comprehensive school on the Isle Of Sheppey to set an essay to all those in English lessons about ten days before they were due to leave school. The students were asked to imagine that they were 60 and write a short, reflective account of their life. The data offers a unique insight into the hopes and aspirations of young people on the island at the time.

What were the key requirements for the QualiBank?

The key requirements for the system were that qualitative data should be easily discoverable, retrievable, and could be examined in context, and finally, cited in a robust way.

The ability to provide context requires that there is adequate rich descriptive metadata for files. This metadata should 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
- examine the metadata about the interview, e.g. the speaker and various attributes
- be able to visit related information, such as external websites holding contextual documentation about the study or topic, e.g. maps

To prepare materials for the system, data must be highly structured and consistently marked-up. This system uses standardised metadata elements that, providing others use similar elements, enable federated catalogues across providers and borders.

Data collections used to pilot the system were chosen to represent a range of 'typical' outputs from a qualitative research project.



What standards does QualiBank use?

QualiBank is based on existing metadata schemas and known technologies. 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.

Three metadata standards were used:

- DDI Codebook 2.5 for basic study-level catalogue metadata
- Qualitative Data Exchange (QuDEx) schema for rich file-level description, document coding and annotation and intra-collection relationships
- Text Encoding Initiative (TEI) schema for mark-up of textual data items

DDI CODEBOOK 2.5

The Data Documentation Initiative (DDI) is a specification for capturing metadata about social science data. It was originally created to capture the information found in survey codebooks, which remains the focus of earlier versions. Most survey organisations around the world use this for documenting survey data collections. At the UK Data Archive it is also successfully used for cataloguing qualitative data collections. It is used for:

- basic study-level catalogue metadata
- rich variable description for survey files

The standard is maintained by the Data Documentation Initiative Alliance (ddi.org), a membership-driven consortium including universities, data archives, and international organisations.

<pre><keyword vocab="Y">1972</keyword> <keyword vocab="Y">1972</keyword> <keyword vocab="Y">1973</keyword> <topclas>Ctopclas>General - Employment and labour</topclas> <topclas>Economic history - History</topclas> <topclas>Economic history - History</topclas> <topclas>Social history - History</topclas> <topclas> <topclas></topclas></topclas></pre>	
Family life and marriage - Social stratification and groupings	Discover > Catalogue
<abstract>[Content removed for copyright purposes.]</abstract>	Catalogue
<abstract>[Content removed for copyright purposes.]</abstract>	
▼ <sumdscr></sumdscr>	
<pre><timeprd date="1870-01-01T00:00:00Z" event="start">1870</timeprd></pre>	UK Data Service data catalogue record for:
<timeprd date="1973-01-01T00:00:00Z" event="end">1973</timeprd>	
<colldate date="1969-01-01T00:00:002" event="start">1969</colldate>	Family Life and Work Experience Before 1918, 1870-1973
<colldate date="1973-01-01T00:00:002" event="end">1973</colldate> <nation>Great Britain</nation>	
<pre><nation>Great Britain</nation> <geogunit>No spatial unit</geogunit></pre>	Documentation Related Studies Publications
<anlyunit>Individuals</anlyunit>	
<anlyunit>Families/households</anlyunit>	TITLE DETAILS
<universe>National</universe>	THE DETAILS
<universe>Families</universe>	SN: 2000
▼ <universe></universe>	Title: Family Life and Work Experience Before 1918, 1870-1973
Men and women born between 1870 and 1908 in England, Scotland and 	
Textual data	Alternative title: Edwardians, 1870-1973
<datakind>Numeric data</datakind>	Persistent identifier: 10.5255/UKDA-SN-2000-1
<datakind>in-depth interview transcripts</datakind>	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
<pre>w<method></method></pre>	Sponsor(s): Economic and Social Research Council
▼ <datacoll></datacoll>	
<timemeth>Cross-sectional (one-time) study</timemeth>	SUBJECT CATEGORIES
Quota sample derived from the occupational census of 1911, cluster	
	Economic history - History
<deviat>453 (gualitative and guantitative)</deviat>	Family life and marriage - Social stratification and groupings
▼ <collmode></collmode>	Canadal Employment and labour
Face-to-face interview; Compilation or synthesis of existing mater	Population history - History
	Social history - History Social history - History
<sources></sources> <weight>No weighting used</weight>	Social instory - history
<weight>No weighting used</weight> <cleanops>A</cleanops>	
	ABSTRACT
<pre><dataaccs></dataaccs></pre>	This is a qualitative study, comprising 453 qualitative interview transcripts, for the first time available as fully readable, searchable rtf files. A
▼ <setavail></setavail>	quantitative data file was also developed during a follow-up project to code some of the data.
<accsplac>UK Data Service</accsplac>	
<pre><collsize>Variables per Case: 191 variables per case </collsize> </pre>	The major part of the collection comprises life-story interviews originally collected as part of the study The Edwardians: Family Life and Work
 v <usestmt></usestmt>	Experience Before 1918. The interviews were undertaken in the late 1960s and early 1970s and formed the basis of the first national oral history
<pre><usestmt></usestmt></pre>	project in the United Kingdom. A total of 453 interviews were recorded on reel-to-reel audio tape and later transcribed as typed, paper documents.

Qualitative Data Exchange (QuDEx)

QuDEx is an XML metadata schema that enables discovery, location, retrieval and citation of complex qualitative data collections in context. It is maintained by the UK Data Archive, University of Essex and enables:

- highly structured and consistently marked-up data
- rich descriptive metadata for files e.g. interview characteristics, interview setting, type of object
- logical links between data objects: text to related audio, images, and other research outputs
- preservation of references to annotations performed on data
- common metadata elements that enable federated catalogues across providers and borders

The schema is maintained at: www.data-archive.ac.uk/create-manage/projects/qudex?index=1



A simple MS SharePoint tool was used to enter metadata in a tabular format:

ite Actions 🔹 过 🛛 Browse	List Tools Items List													Corti, Lou	ise -
ARCHIVE DIgital Fu	utures > QuDE	ix Items ► [Data Entry G	rid -										🥑 I Like R	Tags &
Digital Futures												Search	this site	P	
Poverty in the UK	Collection	Title	Resource Type		File Location	File Location Type	File MIME type						cat:Occupation(ONS c	lass) cat:0)ccupa
Phase 1 QuDEx Items	The Edwardians	Interview with Mr. Keble	other: Interview transcript	2000int001	2000int001.xml	other: BaseX	text/xml	2000int001		5 East of England	Essex	Colchester	Semi-routine	Eleme	intary
QuDEx Headers	The Edwardians	Interview		2000int002	2000int002.xml	other: BaseX	text/sml	2000int002	10	9			Semi-routine	Eleme	intary
A Recycle Bin	The Edwardians	Interview with Mrs. Duckers	other: Interview transcript	2000int003	2000int003.xml	other: BaseX	text/xml	2000int003	1	8 London	Greater London area	London	Routine	Eleme	intary
	The Edwardians	Interview with Mr. Knifton	other: Interview transcript	2000int004	2000int004.xml	other: BaseX	text/xml	2000int004	3	4 London	Greater London area	London	Routine		d trade pations
	The Edwardians	Interview with Mr. Troy	other: Interview transcript	2000int005	2000int005.xml	other: BaseX	text/xml	2000int005		S London	Greater London area	London	Semi-routine	Eleme	intary
	The Edwardians	Interview with Mrs. Craig	other: Interview transcript	2000int006	2000int005.xml	other: BaseX	text/xml	2000int006		1 London	Greater London area	London	Semi-routine		d trade pations
	The Edwardians	Interview with Mrs. Wilson	other: Interview transcript	2000int007	2000int007.xml	other: BaseX	text/xml	2000int007	1	3 London	Greater London area	London	Routine	Eleme	antary
	The Edwardians	Interview with Mr. Rook	other: Interview transcript	2000int008	2000int008.xml	other: BaseX	text/xml	2000int008		2 London	Greater London area	London	Routine	Eleme	antary
	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	Stud	int
	School Leavers Study	Essay by 1	other: Essay	4867ess001	4867ess001.xml	other: BaseX	text/xml	4867ess001		South East	Kent	Isle of Sheppey	Not classified	Stud	mt
	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	Stud	int
	School Leavers Study	Essay by 2	other: Essay	4867ess002	4867ess002.xml	other: BaseX	text/xml	4867ess002		South East	Kent	Isle of Sheppey	Not classified	Stud	int
	School	Image	image	4867ess003	4867ess003.jpg	url	image/jpeg	4867ess003		South	Kent	Isle of	Not classified	Stud	ant



Text Encoding Initiative (TEI)

The Text Encoding Initiative (TEI) is a consortium which collectively develops and maintains a standard for the representation of texts in digital form. QualiBank uses a limited bespoke set of TEI elements from a massive profile. These are used primarily to denote structural mark-up and consist of:

- structural mark-up of textual qualitative data
- three mandatory TEI header elements
- body elements: turn takers, paragraphs, headers
- inline tags: corrections, errors

Example of QualiBank interview marked up in in TEI:

1 </th <th>xml version="1.0" encoding="utf-8"?></th>	xml version="1.0" encoding="utf-8"?>
2 🔻 <t< td=""><td>El 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,</td></t<>	El 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 🗸 🗌	<teheader></teheader>
4 😎	<filedesc></filedesc>
5 🗸	<tilestmt></tilestmt>
6	<title type="collectiondisplaylabel">100 Families</title>
7	<title type="sourcedisplaylabel">Interview with Mrs. Angus</title>
8	
9 🗸	<pre><publicationstmt></publicationstmt></pre>
10	<idno type="qudexcollection">q-d68c3767-d507-4e80-8910-b29a8421f629</idno>
11	<idno type="qudexsource">q-da978903-a722-47c0-996c-0996090ed2a4</idno>
12	<idno type="qudexdocument">q-6a3e707a-2b18-4b4c-b3de-8a56d81cd7a1</idno>
13	
14 😎	<sourcedesc></sourcedesc>
15	Families, Social Mobility and Ageing, an Intergenerational Approach, 1900-1988
16	
17	
18	
19 🔽	<text></text>
20 💙	<body></body>
21	<u n="1" who="I" xml:id="q-2e5b40aa-a9f3-e211-b501-000bdb5cc6d5">Can you remember anything about your grandparents?</u>
22	<u n="2" who="R" xml:id="q-2f5b40aa-a9f3-e211-b501-000bdb5cc6d5">Yes, I remember my grandmother very well and my grandfather.</u>
23	<u n="3" who="I" xml:id="q-305b40aa-a9f3-e211-b501-000bdb5cc6d5">Is that your father's or your mothers?</u>
24	<u n="4" who="R" xml:id="q-315b40aa-a9f3-e211-b501-000bdb5cc6d5">No, not my father's, 'cos I had a stepfather. I do remember his mother, you know</u>
25	<u n="5" who="I" xml:id="q-325b40aa-a9f3-e211-b501-000bdb5cc6d5">What can you remember about her?</u>
26	<u n="6" who="R" xml:id="q-335b40aa-a9f3-e211-b501-000bdb5cc6d5">You mean what she looked like and yeah, she was a very tiny lady. Very prim and</u>
27	<u n="7" who="I" xml:id="q-345b40aa-a9f3-e211-b501-000bdb5cc6d5">Do you remember her as being very old or anything?</u>
28	<u n="8" who="R" xml:id="q-355b40aa-a9f3-e211-b501-000bdb5cc6d5">Oh yes, she was old. Well she seemed old to me then, you know, because she was t</u>
29	<u n="9" who="I" xml:id="q-365b40aa-a9f3-e211-b501-000bdb5cc6d5">Do you know how old she would have been when she died?</u>
30	<u n="10" who="R" xml:id="q-375b40aa-a9f3-e211-b501-000bdb5cc6d5">No, I don't, honestly. 'Cos she was very sick in hospital. I went to visit her.</u>
31	<u n="11" who="I" xml:id="q-385b40aa-a9f3-e211-b501-000bdb5cc6d5">Do you know how old you were when she died?</u>
32	<u n="12" who="R" xml:id="q-395b40aa-a9f3-e211-b501-000bdb5cc6d5">I must have been about 15 I should imagine. Round about that, 15 16.</u>
33	<u n="13" who="I" xml:id="g-3a5b40aa-a9f3-e211-b501-000bdb5cc6d5">Did you go to her funeral?</u>
34	<u n="14" who="R" xml:id="q-3b5b40aa-a9f3-e211-b501-000bdb5cc6d5">Yes, it was cremation.</u>
35	<u n="15" who="I" xml:id="q-3c5b40aa-a9f3-e211-b501-000bdb5cc6d5">Can you remember anything about it?</u>
36	<u n="16" who="R" xml:id="q-3d5b40aa-a9f3-e211-b501-000bdb5cc6d5">Well, that was I think no, it was my first one that I ever went to. I can remem</u>
37	<u n="17" who="I" xml:id="g-3e5b40aa-a9f3-e211-b501-000bdb5cc6d5">Were there many people there?</u>
38	<u n="18" who="R" xml:id="q-3f5b40aa-a9f3-e211-b501-000bdb5cc6d5">There were quite a few. A lot of her customers and that.</u>
39	<u n="19" who="I" xml:id="c-405b40aa-a9f3-e211-b501-000bdb5cc665">What about the other grandparents. What can you remember about them2</u>

The TEI profile is available at: www.tei-c.org

What technologies does QualiBank use?

Aside from the metadata standards described above, QualiBank uses a range of commonly used technologies for web interfaces that enables searching and retrieval of data and metadata. Briefly, these include:

- BaseX for metadata and textual data storage and retrieval
- 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

Enabling citation of object and extracts in QualiBank

Fine-gained within-system citation is made possible due to the use of randomly generated GUIDs to uniquely identify data collections, collection objects and parts of objects, such as text paragraphs.

The interface allows users to select an extract of text, based on one or more consecutive paragraphs and dynamically retrieve a citation, which can be pasted into any outputs.

	Collection ID (SN):	2000						
	Title:	Family Life and Work Experience Before 1918, 1870-1973						
Cancel	Principal investigator:	Thompson, P., University of Essex. Department of Sociology						
4 extracts selected		Lummis, T., University of Essex. Department of Sociology						
	Sex:	Female						
RETRIEVE CITATION	Age group:	75-84						
	Socio-economic status:	Routine						
	Region:	North West						
	Licence:	Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International Licence.						
		© 0 8 0						
	+ Additional metadata	U ET RU SH						
	± Additional metadata							
	INTERVIEW TRA	NSCRIPT	^					
	Create citation Select an extract below	and then use the 🔺 🔻 arrows to expand your selection. When ready, click Retrieve Citation' to view your	^					
	Create citation	and then use the 🔺 🔻 arrows to expand your selection. When ready, click Retrieve Citation' to view your	^					
	Create citation Select an extract below	and then use the ▲ ▼ arrows to expand your selection. When ready, click Retrieve Citation' to view your .	^					
	Create citation Select an extract below unique citation reference	and then use the ▲ ▼ arrows to expand your selection. When ready, click "Retrieve Citation" to view your . te the whole text.	^					
	Create citation Select an extract below unique citation reference Alternatively you may <u>cit</u> R: 149 Lee Gate, Harv	and then use the ▲ ▼ arrows to expand your selection. When ready, click "Retrieve Citation" to view your . te the whole text.	^ 					
	Create citation Select an extract below unique citation reference Alternatively you may <u>cit</u> R: 149 Lee Gate, Harv	and then use the ▲ ▼ arrows to expand your selection. When ready, click "Retrieve Citation' to view your . te the whole text vood, Bolton.	^ • •					
	Create citation Select an extract below unique citation reference Alternatively you may cit R: 149 Lee Gate, Harv I: And your marital st R: Yes.	and then use the ▲ ▼ arrows to expand your selection. When ready, click "Retrieve Citation' to view your . te the whole text vood, Bolton.	^ 					
	Create citation Select an extract below unique citation reference Alternatively you may cit R: 149 Lee Gate, Harv I: And your marital st R: Yes.	and then use the 🔺 🕶 arrows to expand your selection. When ready, click Retrieve Citation' to view your s. te the whole text vood, Bolton. atus? You're a widow, are you?	^ 					
	Create citation Select an extract below unique citation reference Alternatively you may cit R: 149 Lee Gate, Harv I: And your marital st R: Yes. I: Can you tell me wh	and then use the ▲ ▼ arrows to expand your selection. When ready, click Retrieve Citation' to view your steet the whole text. vood, Bolton. atus? You're a widow, are you? at year you were married?	^ 					

Using the URI in the citation takes the user back into the extract, highlighted in green, in QualiBank (that is the URI resolves directly to the data extract quoted).

The whole object can also be cited. We use the APA style for this and include the already



assigned DataCite DOI for the whole data collection. For open collections resolution is not an issue, but for closed collections, the user is prompted to login.

Reusing our standards

We have been spreading the word about our use of XML databases, the QuDEx and TEI metadata standards and the search platform, Solr, to create a powerful interface that deals very well with large quantities of qualitative data. QualiBank 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.

Please contact us if you would like to know more about our system or wish to reuse any of its components in any non-commercial applications.

Contact

digitalfutures@ukdataservice.ac.uk

Tel: +44 (0)1206 872145

UK Data Service