X4L SDiT

Survey Data in Teaching

enhancing critical thinking and data numeracy

RESOURCES PACK

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Version 1.0

University of Essex JISC UK Data Archive

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Introduction to this Resources Pack

This **Resources Pack** contains an introduction to the the X4L Survey Data In Teaching (SDiT) project and its objectives; and the SDiT teaching and learning resources. It provides both an overview of the freely available materials created within the project and a synopsis of the teaching and learning modules detailing the skills that can be learned from their use. The full text versions of the six modules are included in this pack: **four teaching Modules,** two **Module appendices,** a **Glossary** of statistical terms and two **resource discovery Modules**. Finally, a guide to accessing the teaching datasets and databases for the data handling exercises is provided.

In addition to this **Resources Pack,** a **Tutor Guide** has been produced which contains: an overview of the teaching and learning resources; suggestions for their use in teaching and learning; model answers to Module 1; a mapping of the SDiT resources onto national Key Skills requirements at levels 3 and 4; case studies of re-use deriving from evaluation within the higher and further education communities; and SPSS syntax for the data analysis exercises.

All of these materials and information are also available in a variety of electronic versions, on the accompanying **SDiT CD-ROM**.

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Acknowledgements

This project was funded under the JISC Exchange for Learning Programme (X4L). First, we would like to thank Andy Wroe, former project officer and Ian Levinson, teacher at the Colchester Sixth Form College, for drafting much of the content of the introductory modules, and in Ian's case, evaluating the resources with his own students. We would like to further acknowledge: the project Steering Committee for their input and expert advice; the teachers and tutors who advised on drafting and evaluating the resources; and the support of the UK Data Archive, in particular Anne Etheridge and Claire Flaxton for their work in helping promoting the project, and those staff who helped evaluate the web resources. Also thanks to Eric Tanenbaum in the Department of Government for his input into the final data analysis sections of the resources. Finally, we would like to thank Susan Eales, X4L Programme Manager for her unwavering enthusiasm and support throughout the project, and Philip Butler from RSC London for helping us get rolling with approaching FE networks.

Louise Corti, Jon Mulberg, Nadeem Ahmad and Jack Kneeshaw, SDiT X4L Project Team, July 2004

Overview of the Survey Data in Teaching (SDiT) teaching and learning resources

Overview of the Survey Data in Teaching (SDiT) teaching and learning resources

Survey Data in Teaching: a resource for students and teachers

The X4L Survey Data in Teaching (SDiT) project aims to increase the use of real data sources held within the JISC portfolio of HE/FE research, teaching and learning resources in the classroom. A grander mission is to improve the data literacy of GCE A level and university students to:

- ✓ enable a better understanding of the use of social science data as applied to real-life problems
- ✓ enhance skills in manipulating numerical data in textbooks, newspapers or reports
- ✓ increase the ability and confidence of students to produce and communicate data
- ✓ become critical consumers of this data

X4L SDiT uses the study of crime in society to show how existing data sources can be utilised, and as such, this project is relevant to a range of social science disciplines, such as sociology, politics, psychology and media studies. The project is also relevant to citizenship studies. The resources can be used for A level syllabi but are also highly applicable for undergraduate and postgraduate learning.

The project has been funded by the JISC Exchange for Learning (X4L) Programme.

About the X4L Programme

The Exchange for Learning (X4L) Programme has been motivated by the drive to make the most of the considerable investment that has taken place in a range of JISC resources for teaching and learning. The programme is exploring a range of strategies, methods, tools and metadata standards that will enable the repurposing of e-learning materials.

Resources

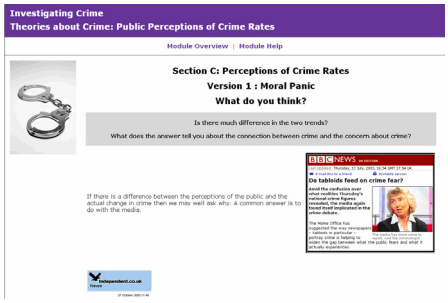
The outputs from the project are a variety of free teaching and learning resources relating to social science and statistics. The materials are based on learning strategies that encourage the teaching of research methods within a substantive context. These pre-prepared materials can save teachers considerable time and effort, and also offer ideas of how to utilise data sources in their own teaching.

Teaching and learning modules

The teaching and learning modules are designed to be used as part of standard classroom teaching or as additional/self-paced learning activities.

The six modules and appendices are available in a variety of formats:

- ✓ web-based resources hosted at the UK Data Archive web site
- ✓ printable and reproducible hard copies (bound paper workbook with accompanying CD-ROM, MS Word and Adobe PDF)
- ✓ MS PowerPoint presentations which can be used to provide slides or handouts



A **Tutor Guide,** also available to accompany the resources, contains; an overview of the teaching and learning resources; suggestions for their use in teaching and learning; model answers to Module 1; a mapping of the SDiT resources onto national Key Skills requirements at levels 3 and 4; case studies of re-use deriving from evaluation within the HE/FE communities; and SPSS syntax for the data analysis exerises.

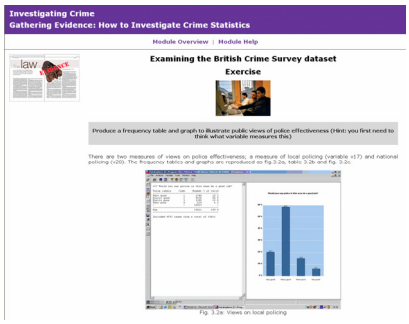
The intention is for the UK Data Archive (UKDA) based at the University of Essex to host these resources for the longer term. X4L SDiT will contribute to the JISC UK repository of teaching and learning materials.

Databases for teaching

A cut-down version of the Home Office-funded British Crime Survey 2000 data has been produced for use in the classroom and is freely available to students and teachers. Students can investigate issues and methods using 'live' data. Teaching datasets for other UK surveys are also available from the UKDA at www.data-archive.ac.uk

Data analysis

The data may be analysed:



- ✓ via the UKDA web site using Nesstar
  Nesstar is freely accessed on the internet. The data can be explored directly online using very simple point-and-click procedures or the dataset can be downloaded from the site and imported into other software, such as Excel or SPSS.

- ✓ by using free data analysis software
  For this project a free demonstration version of NSDstat has been provided. This is a very easy Windows-based program that enables students to examine the British Crime Survey data for themselves, and produce their own tables and graphs. The software is downloadable from the X4L web site. NSDstat has been developed for schools and colleges by the Norwegian Data Service, and is the analytical engine for Nesstar.

Introduction to the modules

Introduction to teaching and learning modules

Module 1: Tracking Crime: Police Recorded Crime Figures, Trends and Reasons for Change

This module looks at the trend in recorded crime. It charts the trend in crime for each of the last three political administrations, and concludes with an exercise linking policy decisions with possible explanations for changes in crime levels.

- Find out what has been happening to crime rates
- Find out how crime is measured
- Examine the effectiveness of different governments on crime
- Try to figure out what you would do

Skills covered

- ✓ Line graph reading
- ✓ Interpretation of trends
- ✓ Internet usage
- ✓ Group discussion
- ✓ Problem analysis and evaluation

Module 2: Theories About Crime: Public Perceptions of Crime Rates

The module considers an alternative method of measuring crime to the previous module, using the British Crime Survey, and compares the two measures of crime levels. It then shifts emphasis to look at perceptions of crime trends, and examines different theories as to why the public perception of crime levels may not match the actual risk of victimisation.

- There are different ways to record crime
- The official report says that although crime is really falling, the public think it is increasing
- Actually when we look at time graphs the position is complex
- A usual explanation is that the media create unnecessary worry
- There are other factors involved, such as social class

Skills covered

- ✓ Comprehension of basic measurement guidelines
- ✓ Trend comparison
- ✓ More complex graphical analysis (stacked bar charts, time indices, paired bar charts)
- ✓ Understanding of theoretical concepts and evaluation of evidence
- ✓ Understanding of simple statistical concepts

There is also an appendix to module 2 for politics and government students which looks at UK party policy on crime.

Module 3: Gathering Evidence: How to Investigate Crime Statistics

This module is concerned with the concepts of operationalisation and validity, and with basic descriptive statistics. It shows how to use the Nesstar site to find out information about the British Crime Survey, to constructively criticise the validity of data used in reports, and to use the simple computer program to generate descriptive statistics, frequency tables and graphs.

- Learn about devising measures for concepts
- Learn how to describe large sets of numbers using only one or two numbers
- Learn how to make and interpret straightforward tables and graphs
- Learn how to cite sources properly
- Learn how to use an undemanding data analysis program

Skills covered

- ✓ Understanding of concepts of operationalisation and validity
- ✓ Understanding of content and usage of metadata
- ✓ Use of internet to explore metadata
- ✓ Understanding of basic descriptive statistics and frequency tables
- ✓ Use of computer program to generate descriptive statistics, graphs and univariate tables

Module 4: Examining Evidence: How to Interrogate Crime Statistics

This is a skills-based module concerned with explaining the analysis of associations between two variables.

- Learn how to alter data
- Learn how to examine associations between two variables
- Learn how to present and analyse data in tables

Skills covered

- ✓ Understanding of concepts of association and independence
- ✓ Use of computer program for recoding data
- ✓ Use of computer program for construction of two-way table
- ✓ Analysis of two-way tables

There is a separate appendix to module four which looks at statistical significance, and also shows how to use NSDstat to investigate this.

There are also two modules which act as general guides to finding and investigating data and documentation on the UK Data Archive site:

Module 5: Searching For Evidence: Sources of Crime Data

This module shows how to search the UK Data Archive website to find out which studies have been conducted on any given topic

- Get a tour of some of the resources available on the web, including
    - UK Data Archive (UKDA)
    - Social Science Information Gateway (SOSIG)
- Learn how to search for other data
- Get a long list of links to other useful sites

Skills covered

- ✓ Resource discovery on the web
- ✓ Finding surveys at the UK Data Archive (UKDA)
- ✓ Exploring the Social Science Information Gateway (SOSIG)

Module 6: Browsing and Analysing Evidence: A Guide To Using Nesstar

This guide shows how to use the online interactive Nesstar website to obtain information about studies, such as data collection details, related publications and even the questionnaire itself. The guide also shows how to use the site to establish which variables are in a dataset, and to produce tables and graphs from the data.

- Get an introduction to the online data system Nesstar
- Find out how to access and browse data using Nesstar
- Become familiar with the British Crime Survey dataset
- Learn how to produce tables and graphs online

Skills covered:

- ✓ Accessing and browsing data using online resources
- ✓ Familiarity with the British Crime Survey dataset
- ✓ Producing tables and graphs

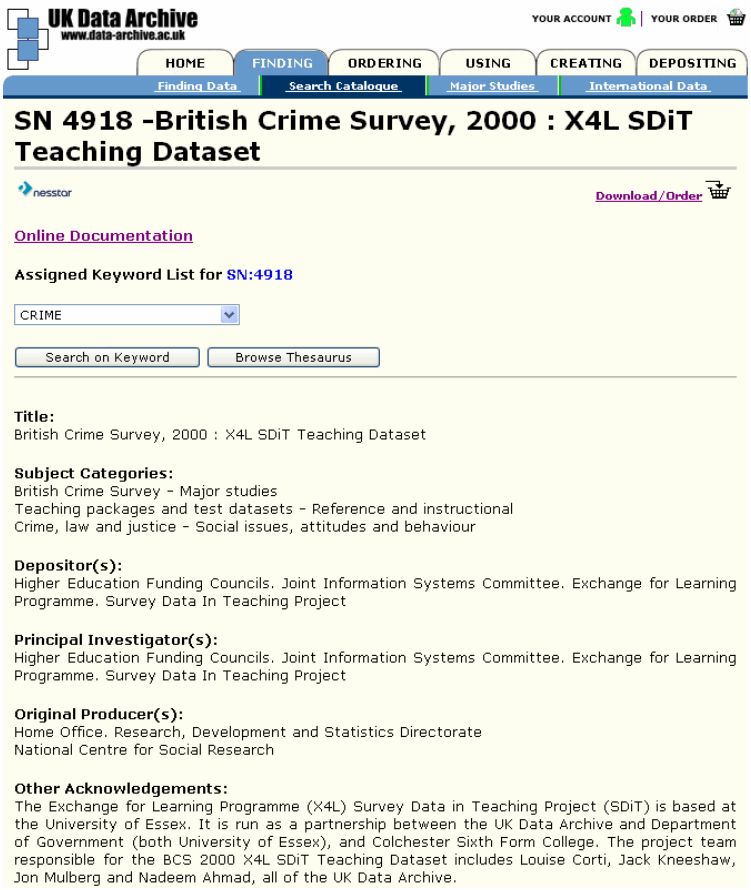
Glossary

There is a short glossary of statistical terms, which are referred to in modules 1-4. The electronic versions of the materials (e.g. in Word or on the web) can link directly to this glossary.

Accessing the databases

Accessing the databases

The UKDA has made available a customised version of the British Crime Survey 2000, for the X4L Survey Data in Teaching (SDiT) project. A full catalogue record is available from the UKDA as SN 4918 - British Crime Survey, 2000: X4L SDiT Teaching Dataset **www.data-archive.ac.uk/findingData/snDescription.asp?sn=4918**



There are 4 options for accessing the database:

1) via Nesstar, the freely available online browsing system;
2) via the UKDA download/ordering system;
3) via the X4L project website;
4) via accompanying CD.

Via Nesstar

To access the database via Nesstar, simply click on the Nesstar icon nesstar at the top left of the catalogue record. Alternatively, go to **nesstar.esds.ac.uk/webview/index.jsp** where the study can be found under the Teaching Datasets folder. The file can be downloaded in SPSS format as **4918.zip** which unzips to **4918_F1.por**. Full instructions on how to use the database in Nesstar is given in *Module 6: Browsing And Analysing Evidence: A Guide to Using Nesstar* at the X4L website: **x4l.data-archive.ac.uk**

Via UKDA download/order

To access the database via UKDA **Download/Order**, simply click on the shopping basket icon at the top right of the catalogue record for the British Crime Survey, 2000 : X4L SDiT Teaching Dataset
www.data-archive.ac.uk/findingData/snDescription.asp?sn=4981.

This will enable you to download the database in a variety of formats for use in statistical packages (SPSS, Stata and Tab delimited). If prompted login using an Athens username and register with the UKDA (a very simple and free online process)

Via the X4L web site

As part of the SDiT project a special version of NSDstat has been made available. This simple to use statistical program — which forms the basis of the Nesstar statistical functionality — is freely available from the X4L web site and comes pre-loaded with the British Crime Survey 2000 database.

Please note that the software is for a Windows based computer, and will only allow the supplied dataset to be run. This software may be installed on as many computers as you wish.

Module 3: Gathering Evidence: How To Investigate Crime Statistics **x4l.data-archive.ac.uk/learning/module3/** and Module 4: Examining Evidence: How To Interrogate Crime Statistics **x4l.data-archive.ac.uk/learning/module4/** provide help on how to use NSDstat to explore and analyse the British Crime Survey 2000.

Alternatively, the SPSS file can be saved from the accompanying X4L CDROM in the directory **\bcs_sdit_4918\spss** (called crime00.por) or the tab delimited file under the **\bcs_sdit_4918\tab** directory (called crime00.tab).

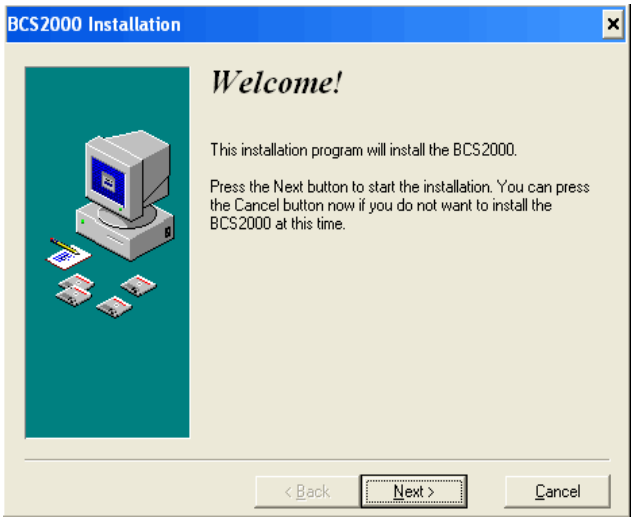
NSDstat download and installation instructions

These instructions help with the downloading and installation of NSDstat. Please note that the programme is best installed locally, that is, on each PC rather than on a server, because manipulation of data in the programme will need to be saved on an individual basis by users, which is easiest through local installation.

NSDstat is available as an executable program from
x4l.data-archive.ac.uk/nsdstat/bcs2000.exe.
If your institution prevents downloading of this type of file a zip file is also available from
x4l.data-archive.ac.uk/nsdstat/bcs2000.zip

1. Click on one of the links to download the file. Make a note of where you downloaded the file (e.g. your desktop). If you downloaded the zip file then unzip the file first before moving onto instruction 2**.**

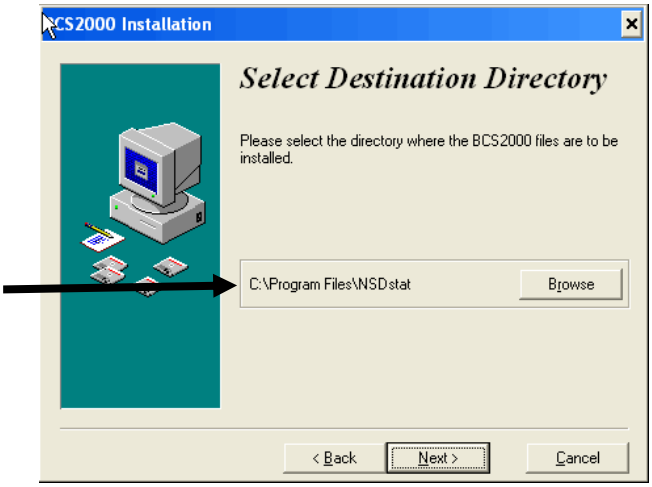
2. Double click the **bcs2000.exe** icon (from where you downloaded/unzipped it to). The installation screen should come into view.

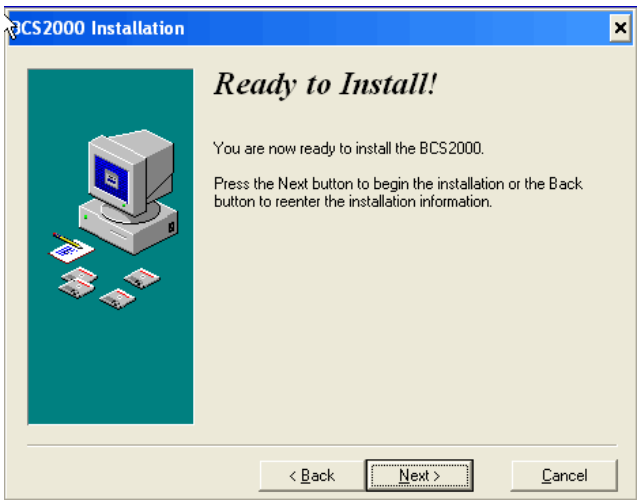


3. Click **Next>**

4. You may change the location of the files from the default of ***C:\Program Files\NSDstat*** using **Browse**.

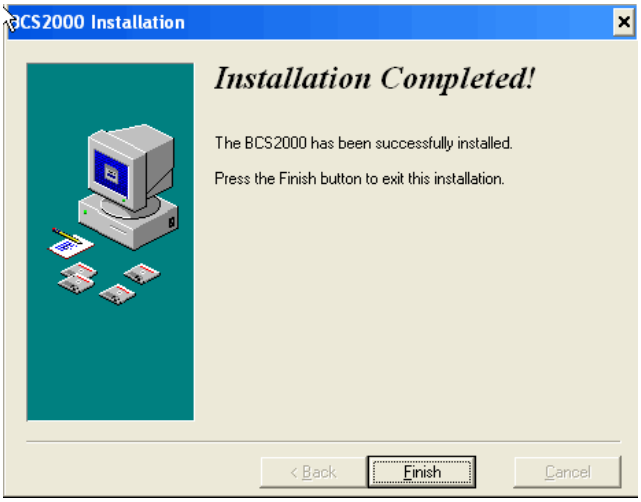
If you are using student/classroom PCs, the file will probably need to be saved to a personal area or drive (e.g. *S:\MyID*). This option will enable any changes made to the data to be saved to this personal area. Once you have made your decision, click **Next>**.



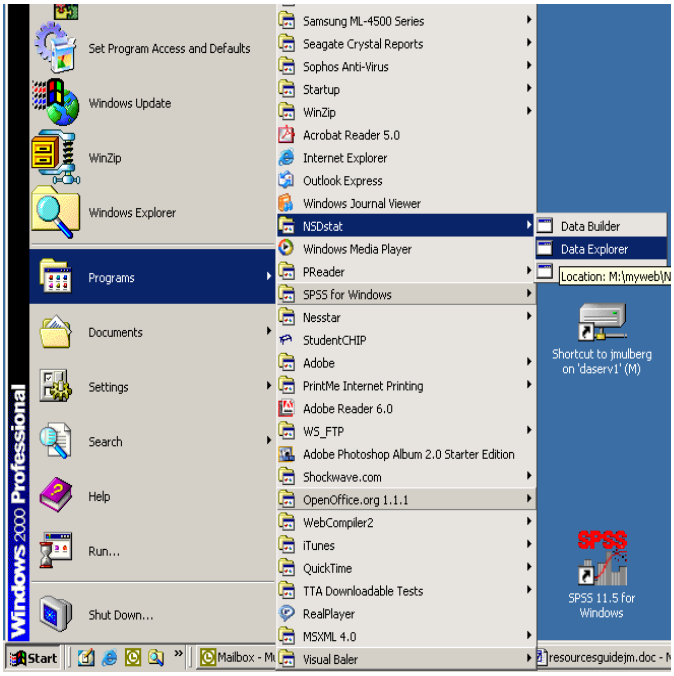


Click **Next>** to install NSDstat

5. NSDstat will then install on your machine. If it is successful, the completion dialog box will appear.



6. You have finished installing NSDstat. To run the program, simply click **Start -> Programs -> NSDstat -> Data Explorer**, which will automatically open the British Crime Survey 2000 dataset. Please note that the **Data Builder** option on the menu will not work as the version of NSDstat available with these resources has limited functionality.



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