

Civil Engineering Students' Information Seeking Strategies

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and

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Loughborough University of Technology

The presentation

- Why?
- What we set out to do
- What we did
- What we found
- What's next?

WHY?

What we set out to do?

- The aims of the research was to review students' information searching strategies when undertaking literature reviews for dissertations and projects and to design a new approach to literature reviews that takes account of both their existing and required searching skills

The objectives

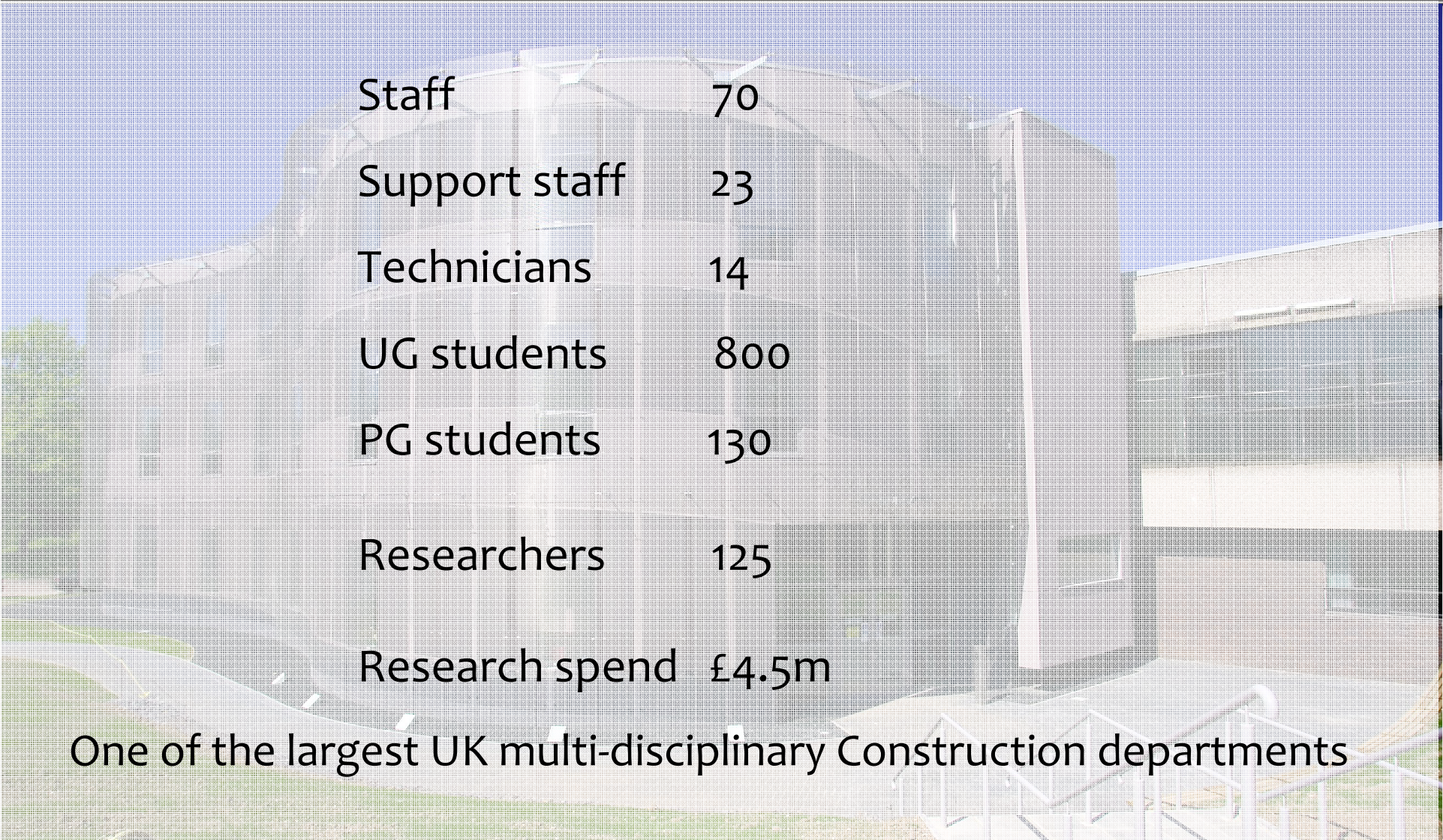
- To review the all-round information search behaviour of students when seeking information for the literature review phase of dissertations
- To review the teaching and learning provided to groups of students with respect to information retrieval and for literature reviews
- To identify the information seeking behaviour of students when using electronic search engines to find information for literature reviews
- To analyse the literature reviews in the resulting dissertations
- To develop and test a new teaching method to assist students in their information seeking for coursework and dissertations

The Department of Civil and Building Engineering

- Nearly **1000** students and **130** academic/admin/technical staff
- **174 doctoral students** (127 PhD and 47 EngD)
- **1st** for Building and **6th** for Civil in the Times Good University Guide 2009
- **1st** for Building in the Independent's 2010 Complete University Guide
- In the **top 3** of the National Student Survey for Civil and Building Engineering for the **last 4 years.**
- Sponsored degrees with **40+** companies
- Graduate employment prospects:
95% of Civil and 100% of Building
students in a graduate job within 6 months



Department of Civil and Building Engineering



Staff	70
Support staff	23
Technicians	14
UG students	800
PG students	130
Researchers	125
Research spend	£4.5m

One of the largest UK multi-disciplinary Construction departments

Department of Civil and Building Engineering

Construction

MEng Civil Engineering

BEng Civil Engineering

BSc Construction Engineering Management

BSc Commercial Management and Quantity Surveying

BSc Architectural Eng and Design Management

Transport

BSc Air Transport Management

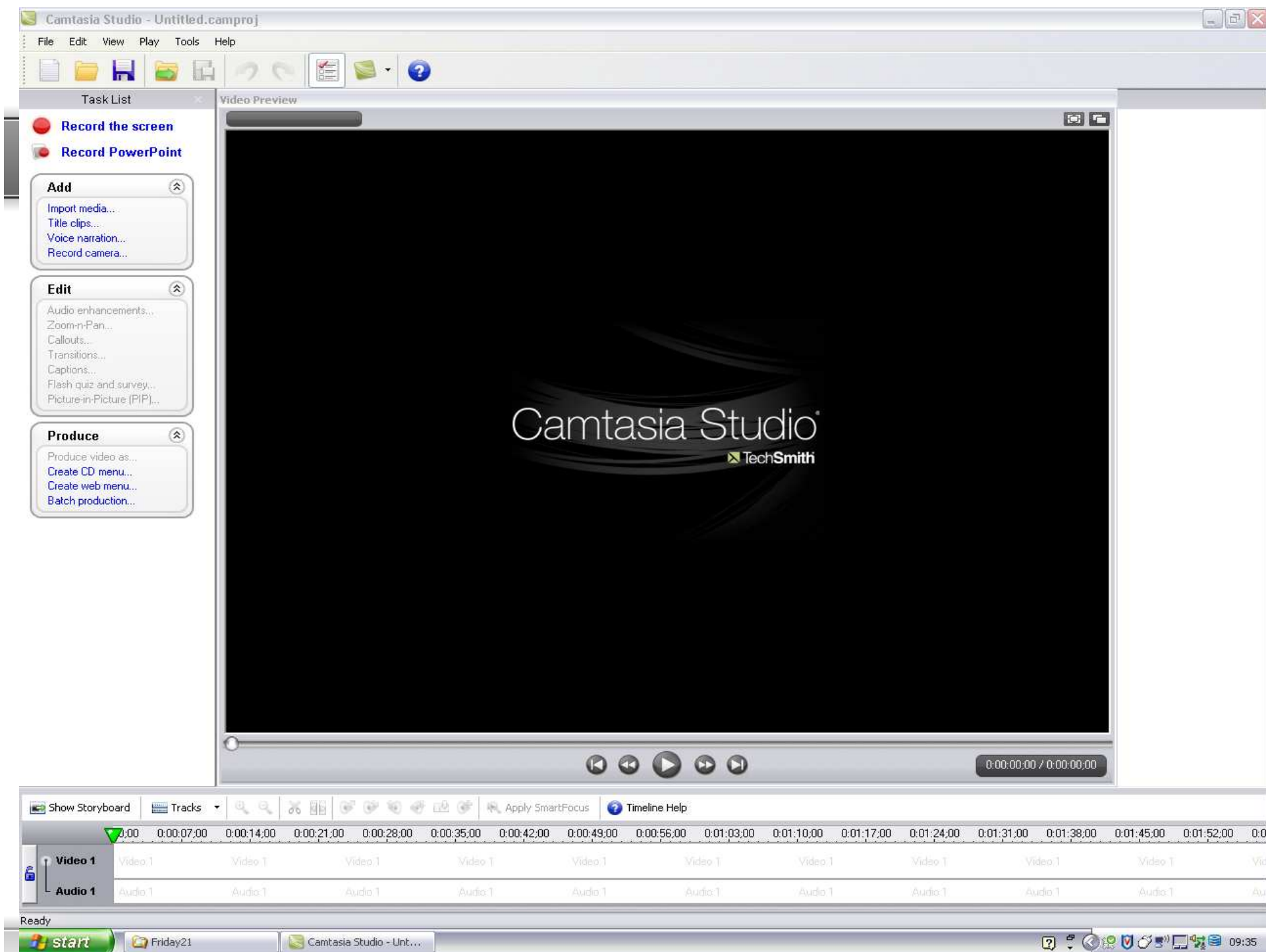
BSc Transport & Business Management

What we did

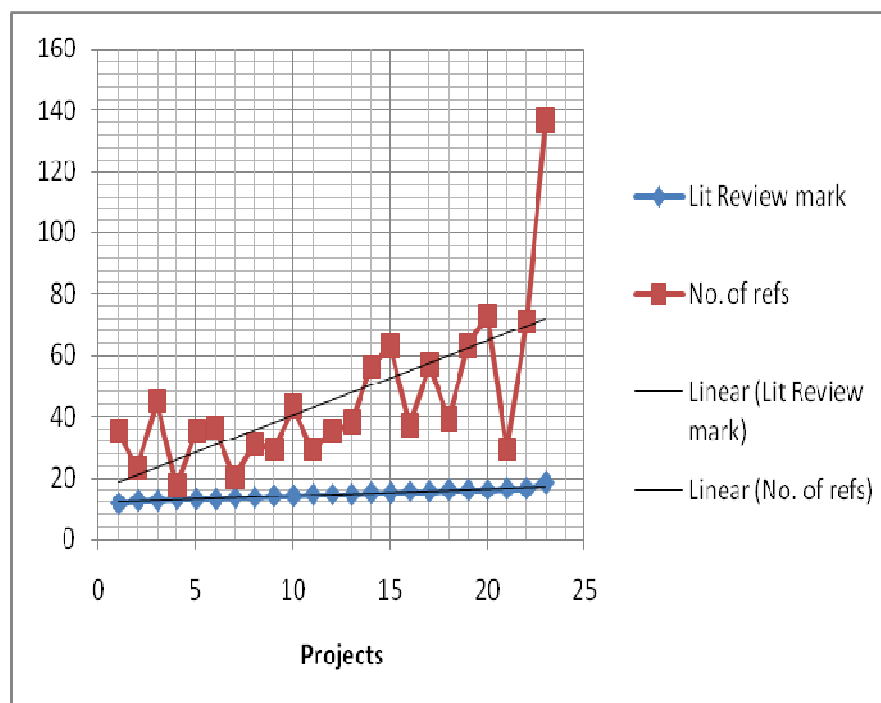
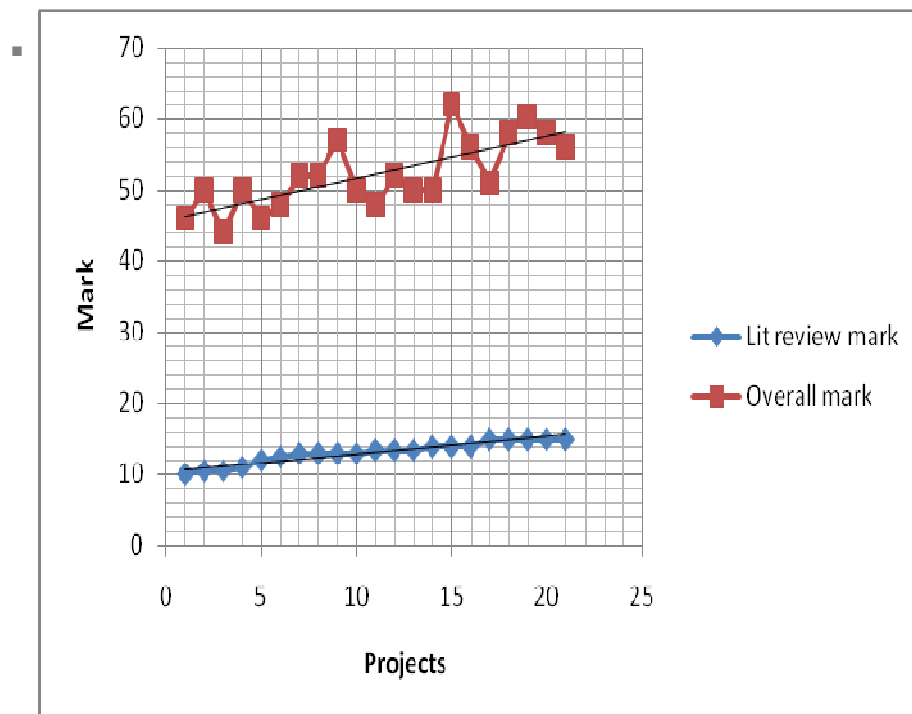
- Reviewed existing literature relating to information searching
- Reviewed the module specifications, student support available and learning material provided for students
- Studied previous students' dissertations to review the number and range of references used and the grades that they achieved for their dissertation
- Surveyed students commencing their dissertation to gain their perspective on their literature
- Undertook experimental work to gain an understanding of students' information searching technique
- Surveyed the academic staff to gain their views on students' literature reviews.

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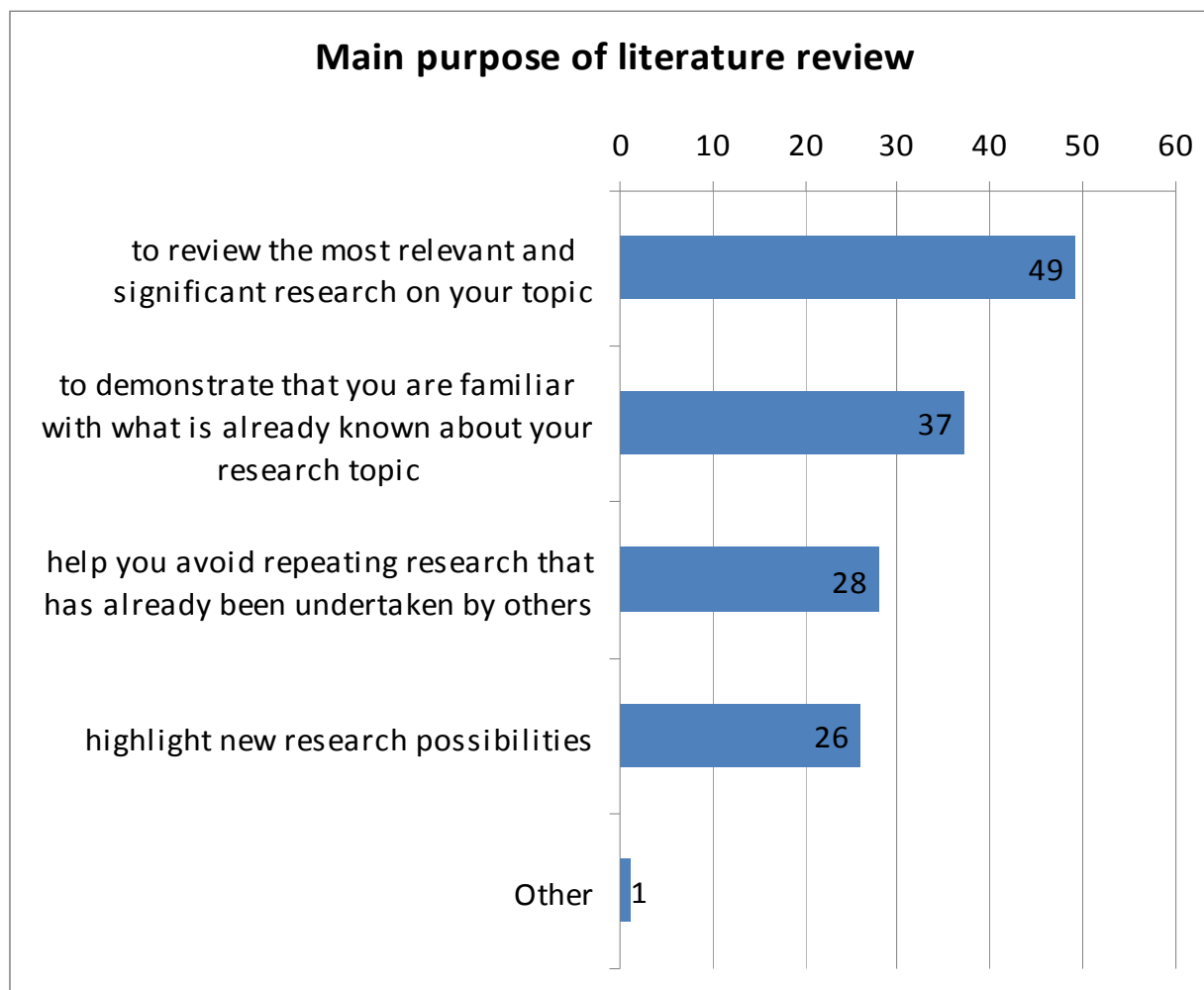
Previous students' dissertations- Literature Review Analysis



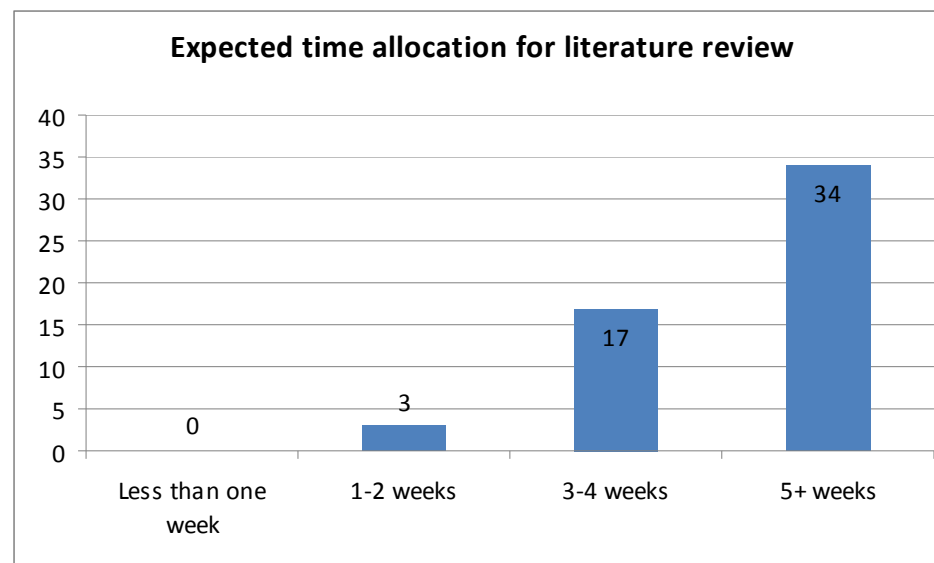
The results of the student questionnaire survey

- 54 students responded (25%)
- Of the 54 respondents, 45 were male and 8 were female. One did not specify.
- Students were asked if their project was primarily a lab-based or experimental project. Of the 52 that answered this question, only 11 (22%) said that it was.
- Students were also asked if they had attended any teaching sessions relating to searching for information this year. The majority (78%) said that they had.
- A pleasing proportion of respondents (90%) felt that the literature review was either very important or important compared to the rest of the dissertation.
- Over fifty percent of respondents expected to search over 15 resources to find information for their project. This is quite a high number if seen in terms of databases, but perhaps less so if you include web-sites as well.

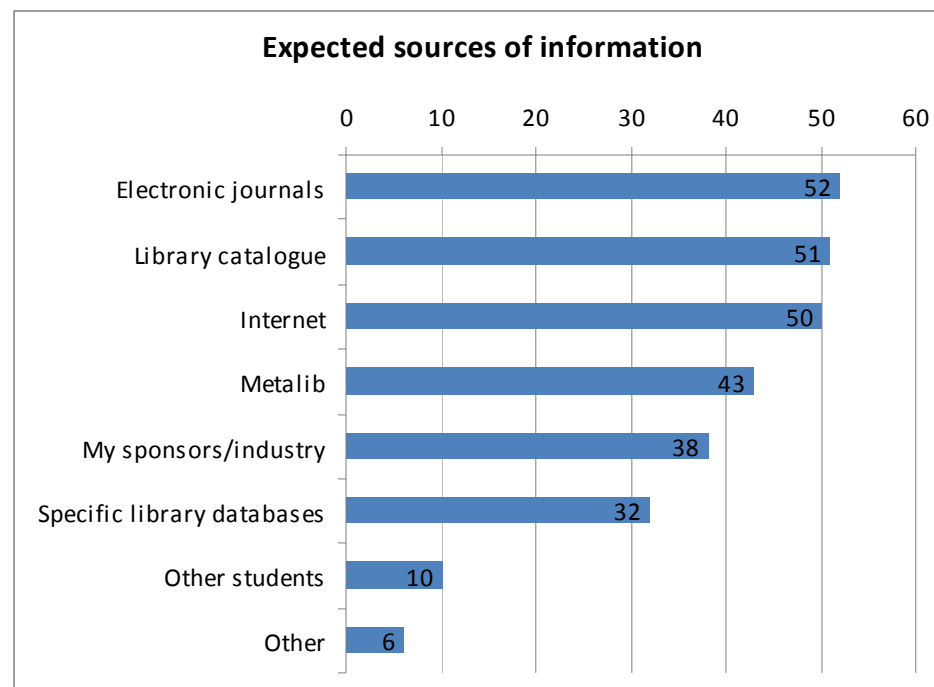
The main purpose of the literature review



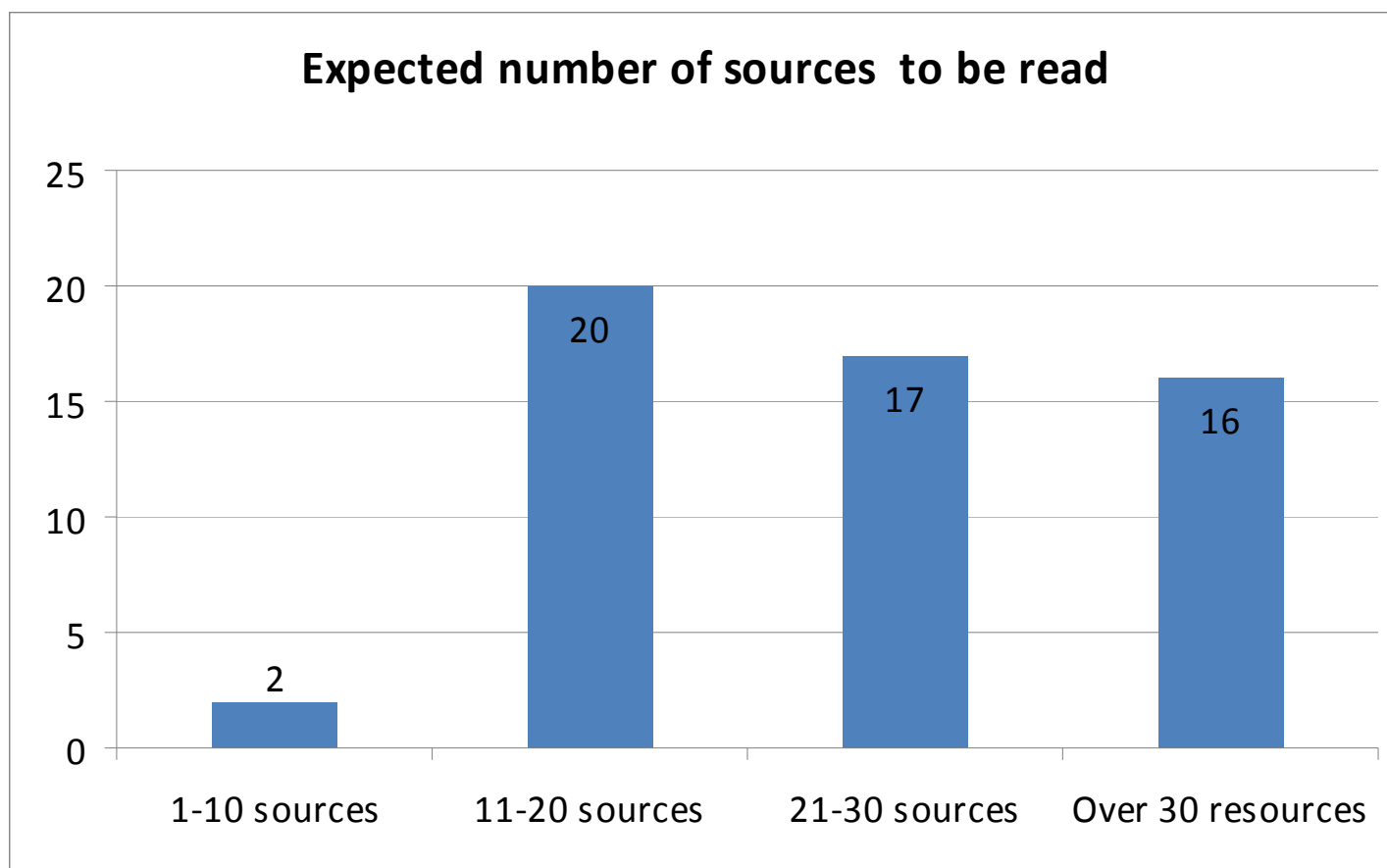
The time students' expected to take for literature review



What sources of information do you expect to use for your Literature review?

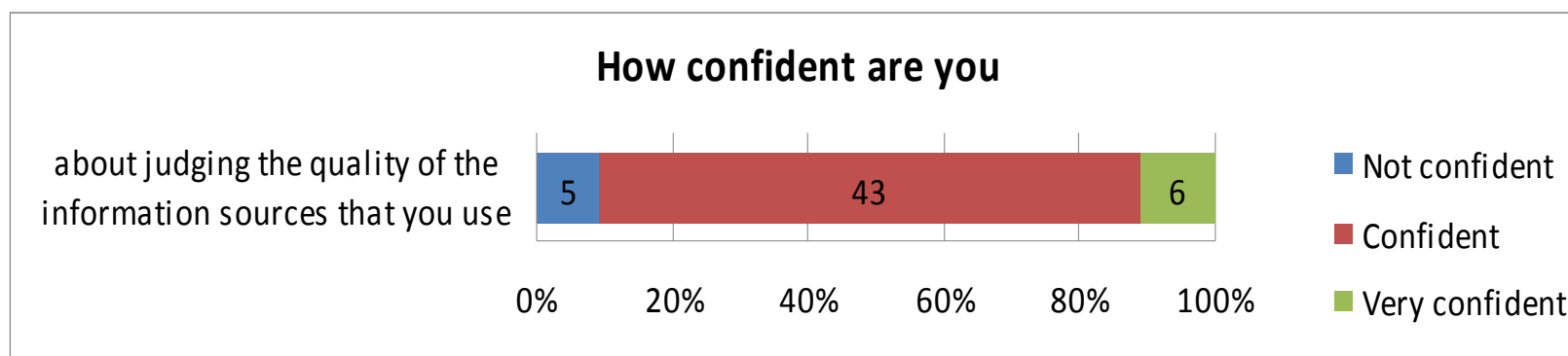


Expected number of sources to be read

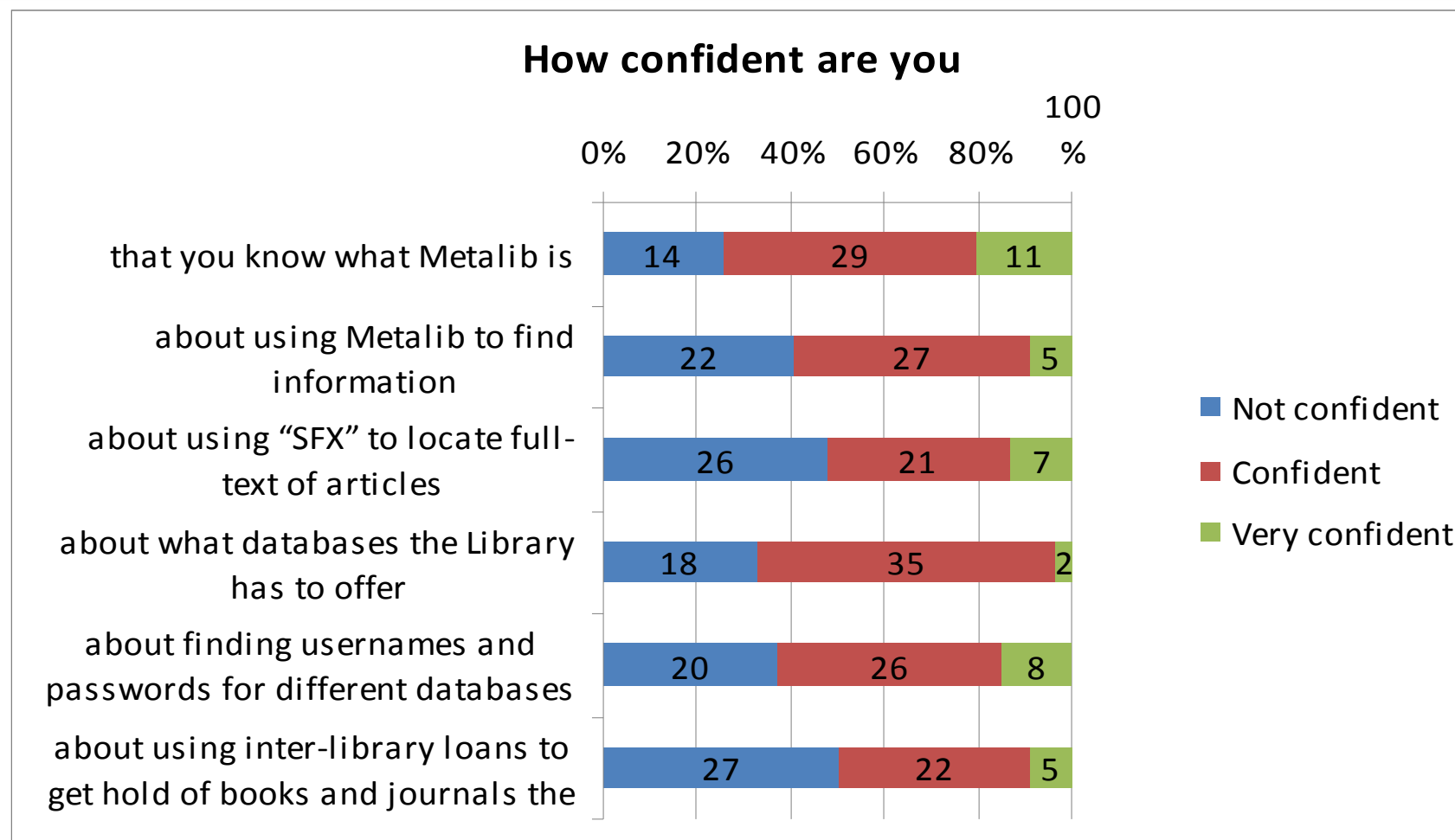


Judging the quality of information

Judging the quality of information

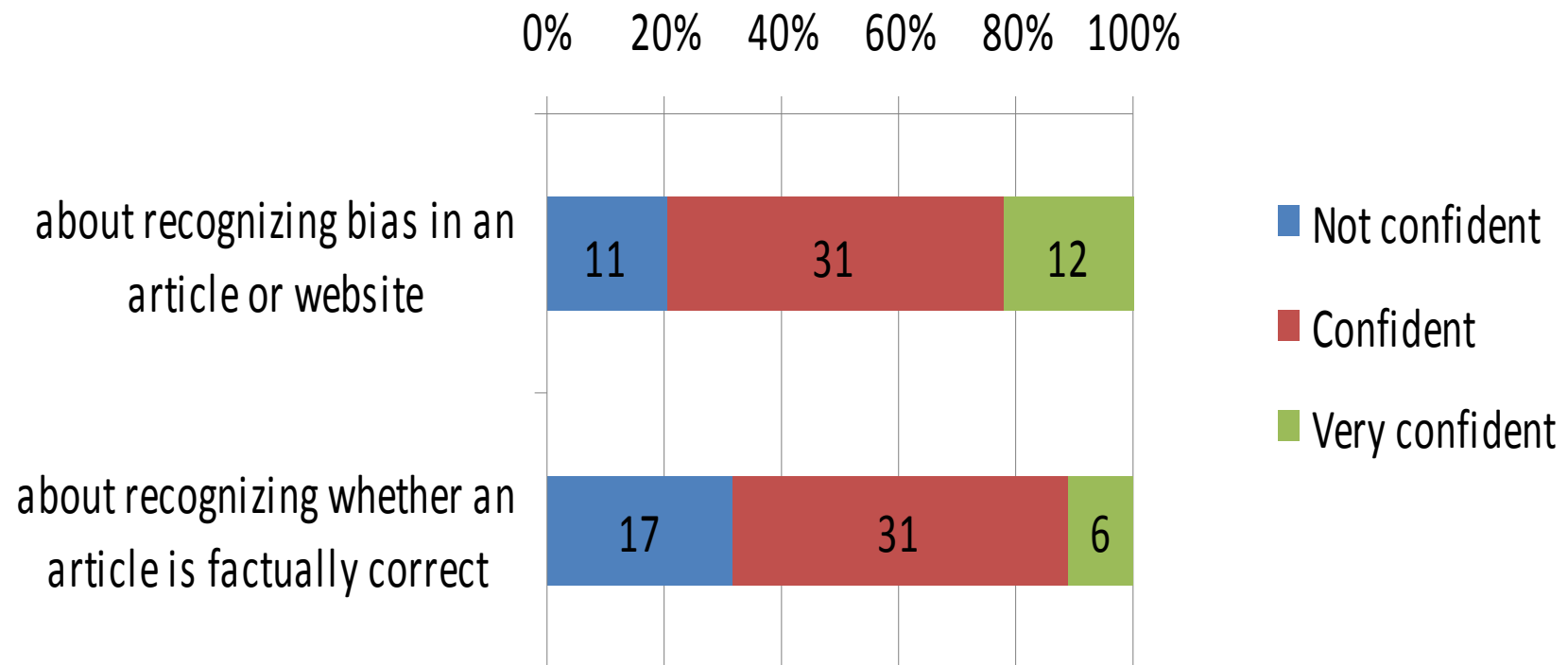


Awareness of Library resources and services



Evaluating information

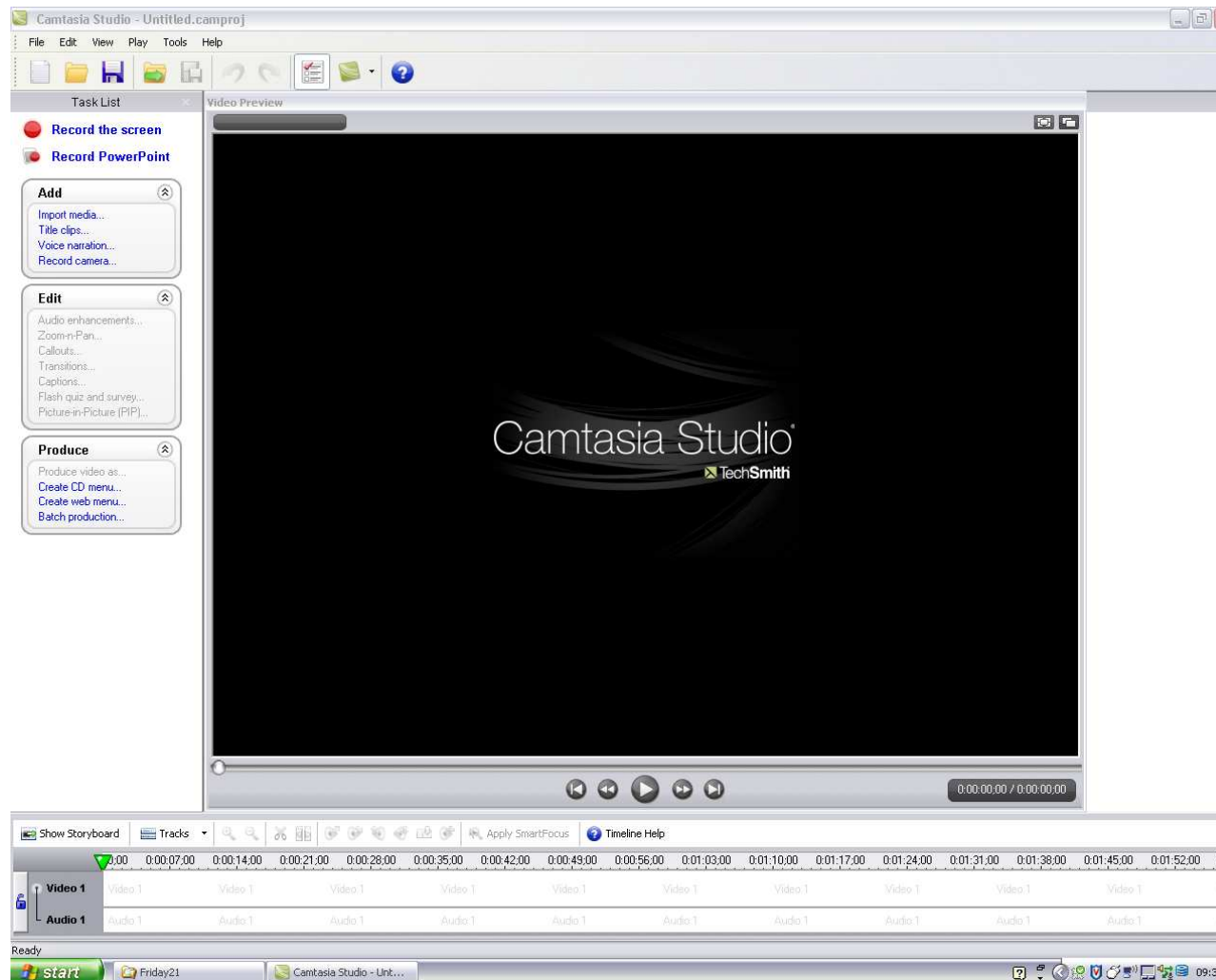
How confident are you

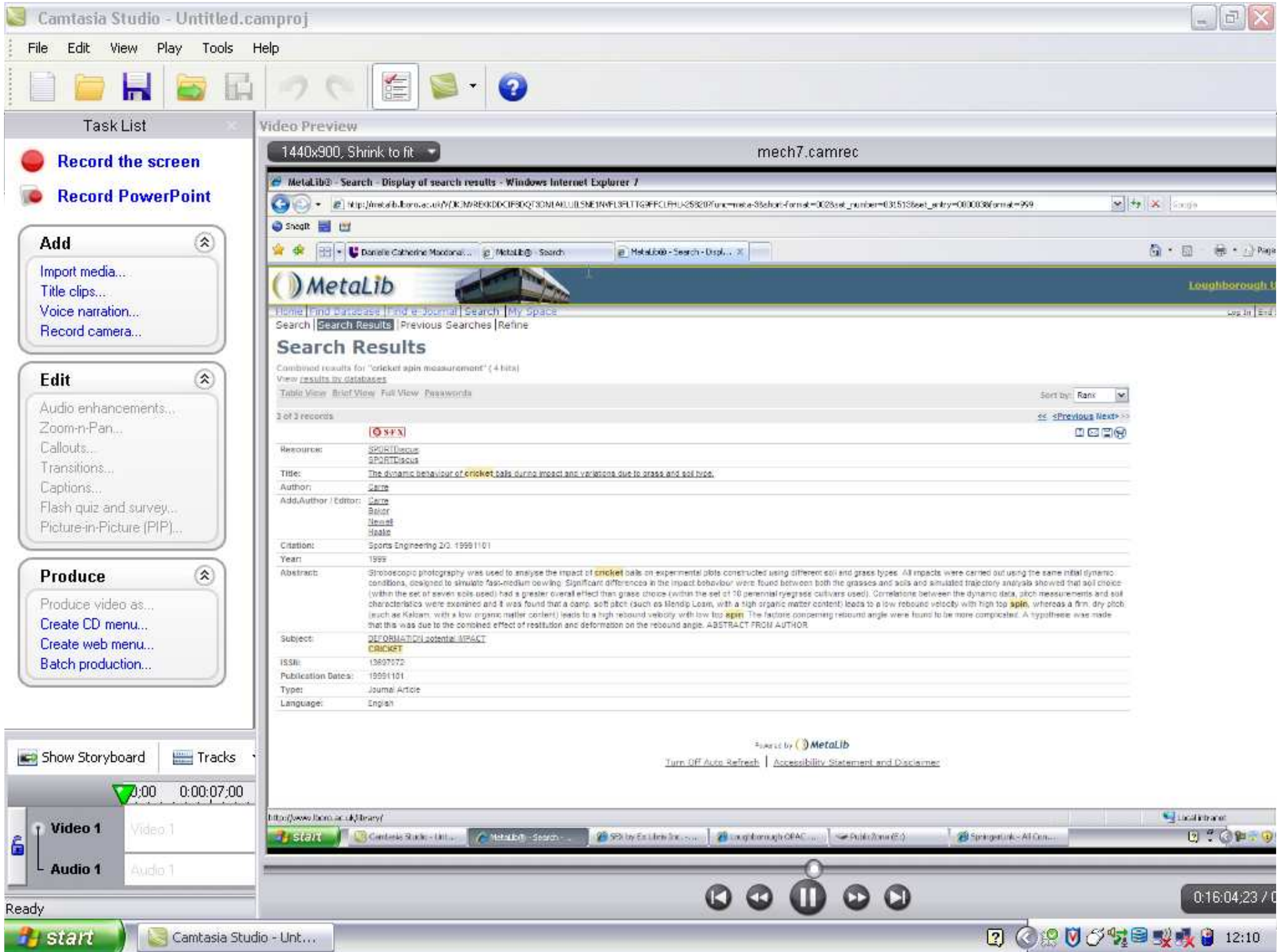


Problems anticipated by the students

- Finding specific information (source or type)
- Finding relevant information
- Dealing with information overload
- Locating the full-text of relevant material
- Finding current information
- Using databases
- Having the right study skills (time mgt, reading, writing)
- Collecting primary data

The experimental work





Task List

- Record the screen
- Record PowerPoint

Add

- Import media...
- Title clips...
- Voice narration...
- Record camera...

Edit

- Audio enhancements...
- Zoom-n-Pan...
- Callouts...
- Transitions...
- Captions...
- Flash quiz and survey...
- Picture-in-Picture (PIP)...

Produce

- Produce video as...
- Create CD menu...
- Create web menu...
- Batch production...

Video Preview

1440x900, Shrink to fit

mech7.camrec

MetaLib® - Search - Display of search results - Windows Internet Explorer 7

http://www.lboro.ac.uk/.../META/REKDDCIPBQ73OM1AHLULSNEIWF13LITGFFCLPHU-25820?func=meta-3&form-format=002&cat_number=031513&cat_entry=0000036&format=999

MetaLib

Home | Find e-journals | Find e-journals | Search | My Space

Search | Search Results | Previous Searches | Refine

Search Results

Combined results for "cricket spin measurement" (4 hits)

View results by databases

Table View | Brief View | Full View | Keywords

Sort by: Rank

2 of 2 records

<< Previous Next >>

Resource:	SPORTDiscus
Title:	The dynamic behaviour of cricket balls during impact and variations due to grass and soil type.
Author:	Sains
Add Author / Editor:	Sains Sains Sains Sains
Citation:	Sports Engineering 2(3), 1999:1101
Year:	1999
Abstract:	Stroboscopic photography was used to analyse the impact of cricket balls on experimental plots constructed using different soil and grass types. All impacts were carried out using the same initial dynamic conditions, designed to simulate fast-medium bowling. Significant differences in the impact behaviour were found between both the grasses and soils and simulated trajectory analysis showed that soil choice (within the set of seven soils used) had a greater overall effect than grass choice (within the set of 30 perennial ryegrass cultivars used). Correlations between the dynamic data, pitch measurements and soil characteristics were examined and it was found that a damp, soft pitch (such as Mendip Loam, with a high organic matter content) leads to a low rebound velocity with high top spin, whereas a firm, dry pitch (such as Kilsom, with a low organic matter content) leads to a high rebound velocity with low top spin. The factors concerning rebound angle were found to be more complexed. A hypothesis was made that this was due to the combined effect of restitution and deformation on the rebound angle. ABSTRACT FROM AUTHOR
Subject:	SPORTS; CRICKET
ISSN:	13607172
Publication Dates:	1999:1101
Type:	Journal Article
Language:	English

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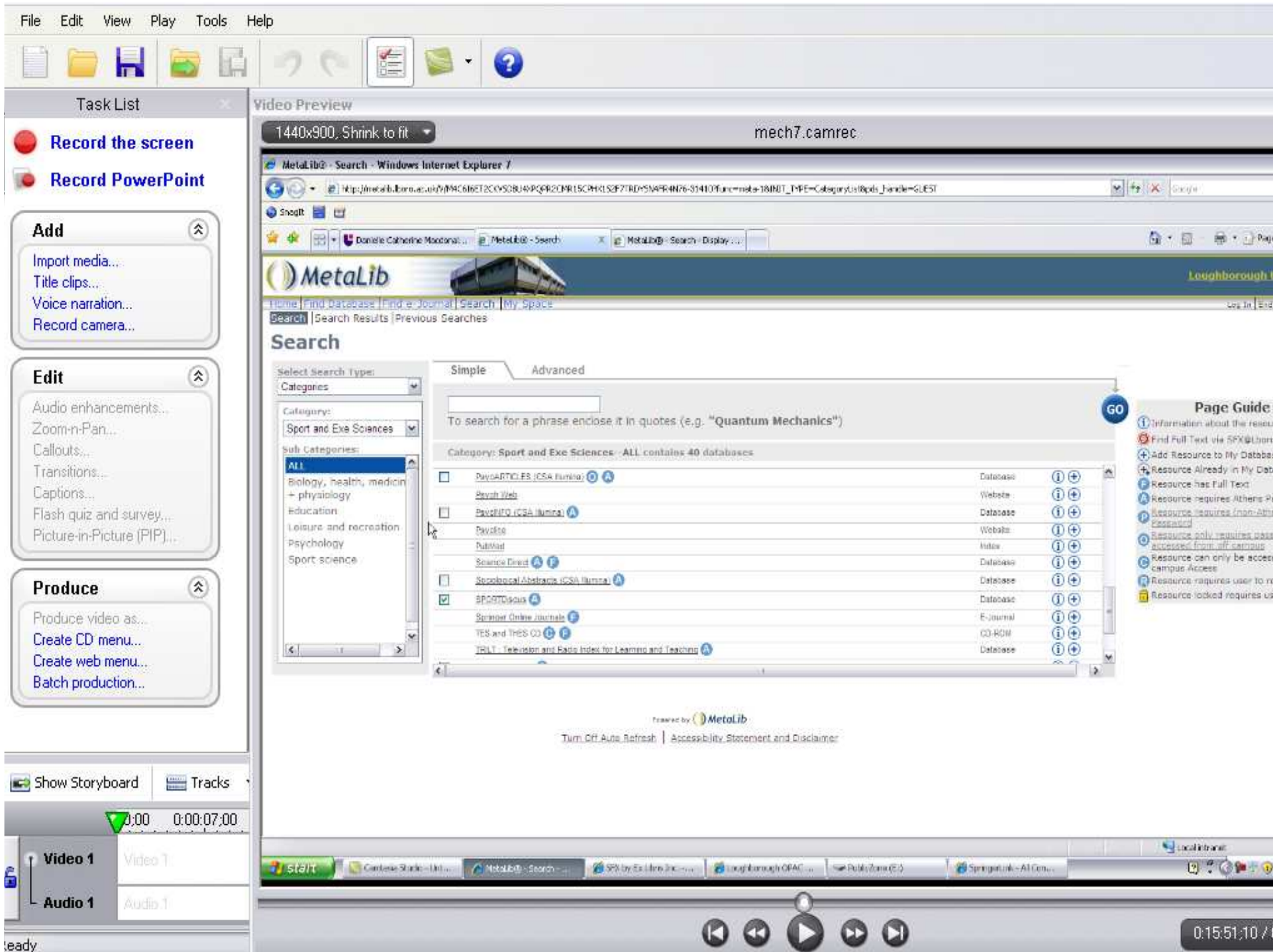
Turn Off Auto-Refresh | Accessibility Statement and Disclaimer

http://www.lboro.ac.uk/library/

Ready



Camtasia Studio - Unt...



File Edit View Play Tools Help



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MetaLib® - Search - Windows Internet Explorer 7

http://metalib.lboro.ac.uk/.../META6B6T2C0V50B4W4P6R2CMR15CPH01SF2TRD/SNAPR4N76-31410?func=ask-18M0T_MPE=Category&Rpds_Handle=GUEST

Search

Select Search Type: Categories

Category: Sport and Exe Sciences

Sub Categories: ALL, Biology, health, medicine + physiology, Education, Leisure and recreation, Psychology, Sport science

Simple Advanced

To search for a phrase enclose it in quotes (e.g. "Quantum Mechanics")

Category: Sport and Exe Sciences - ALL contains 40 databases

<input type="checkbox"/>	DissARTICLES (CSA Illumina)	Database	(i) (+)
<input type="checkbox"/>	DissWeb	Website	(i) (+)
<input type="checkbox"/>	DissWFO (CSA Illumina)	Database	(i) (+)
<input type="checkbox"/>	DissSite	Website	(i) (+)
<input type="checkbox"/>	PubMed	Index	(i) (+)
<input type="checkbox"/>	Science Direct	Database	(i) (+)
<input type="checkbox"/>	Sociological Abstracts (CSA Illumina)	Database	(i) (+)
<input checked="" type="checkbox"/>	SPORTDiscus	Database	(i) (+)
<input type="checkbox"/>	Springer Online Journals	E-Journal	(i) (+)
<input type="checkbox"/>	YES and THES CD	CD-ROM	(i) (+)
<input type="checkbox"/>	TRILT - Television and Radio Index for Learning and Teaching	Database	(i) (+)

GO

Page Guide

- Information about the resource
- Find Full Text via SFX@Lboro
- Add Resource to My Databases
- Resource Already in My Databases
- Resource has Full Text
- Resource requires Athens Pa
- Resource requires non-Athens Password
- Resource only requires password accessed from off campus
- Resource can only be accessed campus Access
- Resource requires user to register
- Resource locked requires user

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Turn Off Auto Refresh | Accessibility Statement and Disclaimer

Show Storyboard Tracks

0:00 0:00:07:00

Video 1 Video 1

Audio 1 Audio 1

start

Control Panel - Start - MetaLib® - Search - SFX by Ex Libris Inc - Loughborough OPAC - PubMed (CD) - Springerlink - All Con...

Local Internet

0:15:51:10 / 0

ultrasonically assisted drilling - Google Search - Windows Internet Explorer 7

http://www.google.co.uk/search?hl=en&q=ultrasonically+assisted+drilling&meta=

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Search: the web pages from the UK

Web

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Ultrasonic assisted drilling alter the machining process to reduce burr size ... **Ultrasonic Assisted Drilling**. ϕ . Adding high frequency and low ...
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by SSF Chang

[PDF] [Ultrasonic Assisted \(UA\) Drilling Conclusions and Future Studies](#)
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of **ultrasonically assisted drilling** of A1100-0 aluminum workpieces. The results demonstrate that under suitable vibration conditions the burr height and ...
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Windows Internet Explorer 7

&authcode=3BE95B4

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Bathroom Culture

Trendsetting

Modern Living

Classics

Afford

Log out

[here to view the 22 new and revised documents added for this update](#)

Type your search term here



[Previous saved searches](#) [Browse Documents](#)

Quick links



0:02:26;26 / 0:35:05.04

RESULTS: Some definitions

- **Query:** Refers to a specific, single search episode within a search session.
- **Search session:** This term refers to all the queries submitted by a participant to one or more systems during the user study.
- **Individual databases:** The term represents any database or website that had been used by participants directly and it was not accessed through an intermediary system or database, such as Metalib, Google or the library OPAC.
- **Surrogates:** The term refers to the bibliographic records that are displayed to the user in a search result interface after a search for information has been performed.
- **Documents.** This term refers to the full text documents (for example, web pages, journal papers or e-books).

RESULTS: The Systems used

- Participants in the study used an average of 2.3 systems per search session.
- The maximum number of systems used were four, while the minimum number was one system per search session.
- 10 participants used the Google search engine to search for information, while six participants used Metalib, the library online catalogue and individual databases respectively.
- In the case of 11 participants, these systems were used in combination.
- The most frequent combinations were between Google + individual databases (three participants), as well between Google + OPAC + individual databases (three participants). Less frequently occurred combinations were: Google + Metalib (two participants), Metalib + OPAC (two participants) and OPAC + Google (one participant).

Table 1. Order of use of IR systems by participants

Systems used	First choice	Second choice	Third choice	Fourth choice
Google	5	4	1	0
Metalib <small>www</small>	3	2	1	0
OPAC	2	3	1	0
Individual dbs <small>www</small>	4	0	1	1

THE RESULTS: Analysis of the queries formulated

- A total of 98 queries were formulated by participants in this study.
- The lowest number of queries per session was two while the highest was 12 queries.
- The mean number of queries per search session was 7.
- From these queries a total of 58 were new queries while the remaining 40 were queries that refined an initial query.
- Also the results showed that participants used an average of 10 words per search session.
- A total of 13 refined queries were used in order to broaden a search, while the remaining 27 to narrow it down.
- However, in the case of 13 queries participants failed to refine their searches. In this case participants retrieved no results or broadened up instead of narrowing down a search.

Participants used several strategies to refine their queries.

General Strategies

- Search for the same term using different databases.
- Narrowing down a search by adding more terms.
- Broadening up a search by removing terms from the query.
- Broadening up a search by replacing terms

Unsuccessful strategies

- Problems with the selection and use of databases in Metalib.
- Problems with the use of field searching in the OPAC.
- Problems related to the use of broader and narrower terms.

How many resources did the students locate?

Students' problems that impeded their on-line searching behaviour

- Lack of training
- Problems related to information overload
- Usability problems; and
- Problems related to different user expectations about the search process

Lack of training

- Problems related to the identification of relevant databases to search in METALIB
- Problems with the selection of appropriate keywords to search in METALIB
- Lack of understanding of the role of metadata – bibliographic elements in the OPAC and the Google search engine
- Lack of training on the use of METALIB

Problems related to information overload

- Difficulty of evaluating the results retrieved across various systems
- Need to remember different login passwords in the case of METALIB and the OPAC.

Usability problems

- Lack of usability for the 'Refine' search function of the METALIB portal
- Inconsistent presentation of summaries – descriptions in the bibliographic details of the OPAC and METALIB
- Presentation of multiple window in METALIB
- Takes a while for the METALIB system to display the results of a search.

Problems related to different user expectations about the search process

- Access to the full text document is not always possible.
- Participants did not like the fact that they couldn't search both journal databases and the web using METALIB.

Additional training is required on the following:

- How to identify relevant databases to search in METALIB
- Training on how to use METALIB
- Introduction to the role of metadata-bibliographic elements in the OPAC and the Google search engine

- Management of user expectations
- Management of usability issues
- Management of usability problems
- Management of information overload

- How to select keywords for searching

What will we be doing next?

Further questions

- Would we get similar results across other Departments and other Faculties?
- Are students overconfident in assessing the quality of information?
- The consistency of staff supervision?
- Is the student project /dissertation the ‘capstone’ of the student’s studies?
- The role of the dissertation in engineering education?

THANK YOU

For further information please contact :

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