

Note

Reliable sources are cornerstone to scientific work (Perdicoulis, 2014b), so any aspiring scientist must know *how* and *where* to search for the right material — whether through physical visits to libraries, or digital queries.

1 Locations

PUBLISHERS — e.g. search portals, journal websites

LIBRARIES — e.g. local resources, online journal subscriptions

AUTHORS — e.g. websites, personal communication

SEARCH ENGINES — e.g. general or specialised/ scholarly (§ 3)

SOCIAL MEDIA — e.g. general or specialised/ academic

REFERENCE/ BIBLIOGRAPHY LISTS of relevant and trusted publications

2 Card Catalogue

The *index cards* are the classic registers for every item in a library, and are stored in card catalogues that can be searched manually (Perdicoulis, 2014c). The index cards contain full bibliographic information (Perdicoulis, 2014a) — with formatting variations across the libraries — and their primary use is to locate specific physical resources on the library shelves (e.g. books, journals, or articles).

307.12 PERD	Perdicoulis, Anastássios Building competences for spatial planners: Methods and techniques for performing tasks with efficiency London; New York: Routledge, 2011 182 p. : ill. ; 24 cm. ISBN: 0203831381 (ebook : alk. paper) ISBN: 0415594545 (hardback : alk. paper) ISBN: 0415594561 (pbk. : alk. paper) ISBN: 9780203831380 (ebook : alk. paper) ISBN: 9780415594547 (hardback : alk. paper) ISBN: 9780415594561 (pbk. : alk. paper)
	Contents: Introduction -- Starting point -- Desired end point -- Action proposal -- Test-flight, or Ex-ante assessment -- Proof of performance, or Ex-post assessment -- Epilogue. Includes bibliographical references and index.

An index card for the ‘Building Competences’ book (Perdicoulis, 2011)

The same cataloguing information of the index cards (i.e. bibliographic information plus physical location) is also stored in digital databases, thus permitting more *flexible* (e.g. searching by author, title, or ISBN) and even *remote* searches (subject to access privileges).

3 Digital Search

3.1 Engines

SINGLE SEARCH ENGINE — e.g. a ‘general’ search on the web with either *Google*, *Bing*, or *Yahoo!*

METASEARCH ENGINE — e.g. *DEVONagent Pro*, blending information from various search engines

LOCAL INDEXING ENGINE — e.g. *Spotlight* or *Leap* to search for a particular type of file on (or part of) a computer drive, or the search facility of a reference manager (Perdicoulis, 2014a)

3.2 Search operators

Special ‘logical’ (a.k.a. Boolean) and ‘extended’ *search operators* can be used with minor variations across the different databases and search engines to return better results, even if that takes a bit longer.

Online search operators

INTENT	USE	EXAMPLE
Find the exact phrase	quotation marks (“ ”)	‘all of that jazz’
Find two items together	AND ^a	panthers AND pink
Find any of two kinds	OR ^b	tigers OR panthers
Exclude a kind	NOT	tigers NOT Africa
Define proximity	NEAR ^c	city NEAR bus
Define sequence	BEFORE, AFTER	schedule BEFORE work
Use wildcards	*, ?, ~	caricat*
Make complex queries	blocks in parentheses	(tigers OR panthers) NOT India
Find a file of a certain type	kind: (with colon)	kind:PDF

^aThe AND operator is usually implied between search terms

^bThe ‘exclusive OR’ (XOR) is usually a more effective disjunctive

^cA ‘distance’ can be defined — e.g. NEAR/5: within five words

3.3 Advanced queries

EX. 1: to search for an ‘*impact tracing workshop or school*’:
(*impact BEFORE tracing*) NEAR (*workshop OR school*)

EX. 2: to search for ‘*impact tracing in SPML*’ (modelling language):
(‘*Systems Planning Modelling Language*’ OR SPML) AND (*impact NEAR tracing*)

EX. 3: to search for ‘*a Systems Planning video (or webcast) with the keyword “attitude”*’:
(*systems BEFORE planning*) NEAR (*webcast OR video*) AND *attitude*

3.4 Email search

Searching for information within an email database — including *documents* as attachments — involves a special set of operators, a sample of which is indicated in the table below.

Email search operators

INTENT	USE	EXAMPLE
Find a file of a certain type	filename:	filename:pdf
Find a file by its name	filename:	filename:text.txt
Find a message by its subject	subject:	subject:business
Find a message by subject keywords	subject:	subject:(meeting management)
Find a message by a subject string	subject:	subject:‘management meeting’
Find a message by sender	from:	from:john
Find a message by date	after:	after:2016/10/10
Find a message by age	older_than:	older_than:5d

Bibliography

Perdicoulis, A. (2014c) *Cataloguing*. Perdicoulis Publishing: Folio Division, Technical Collection.

Perdicoulis, A. (2014b) *Research*. Perdicoulis Publishing: Folio Division, Technical Collection.

Perdicoulis, A. (2014a) *References*. Perdicoulis Publishing: Folio Division, Technical Collection.

Perdicoulis A. (2011) *Building Competences for Spatial Planners: Methods and Techniques for Performing Tasks with Efficiency*. London: Routledge.