

# Fostering open education in Information Literacy using a taxonomy

LIBER 2021 - Libraries and Open Knowledge: from vision to implementation

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**Harrie van der Meer**

University of Amsterdam/ Amsterdam University of Applied Sciences, Amsterdam

**Marijn Post**

HAN University of Applied Sciences, Nijmegen

**Renée de Waal**

Wageningen University & Research, Wageningen

**Monique Schoutsen**

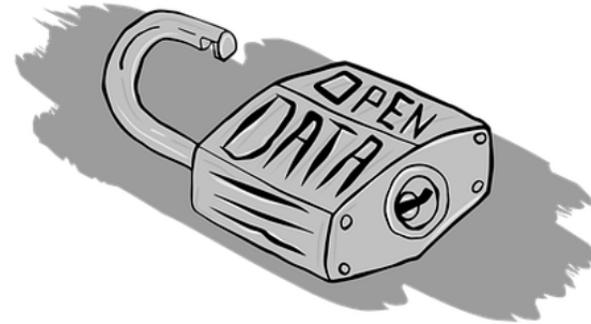
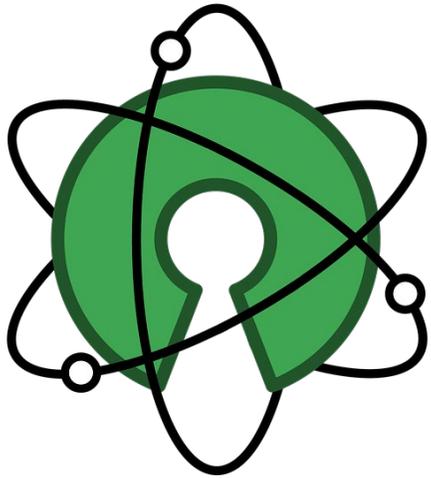
Radboud University, Nijmegen

# PROGRAM

- Introduction: open education & Information Literacy
- Development and use of an IL taxonomy
- Digital badges



# OPENING UP KNOWLEDGE IN THE NETHERLANDS



# HOW TO FOSTER OPEN EDUCATION

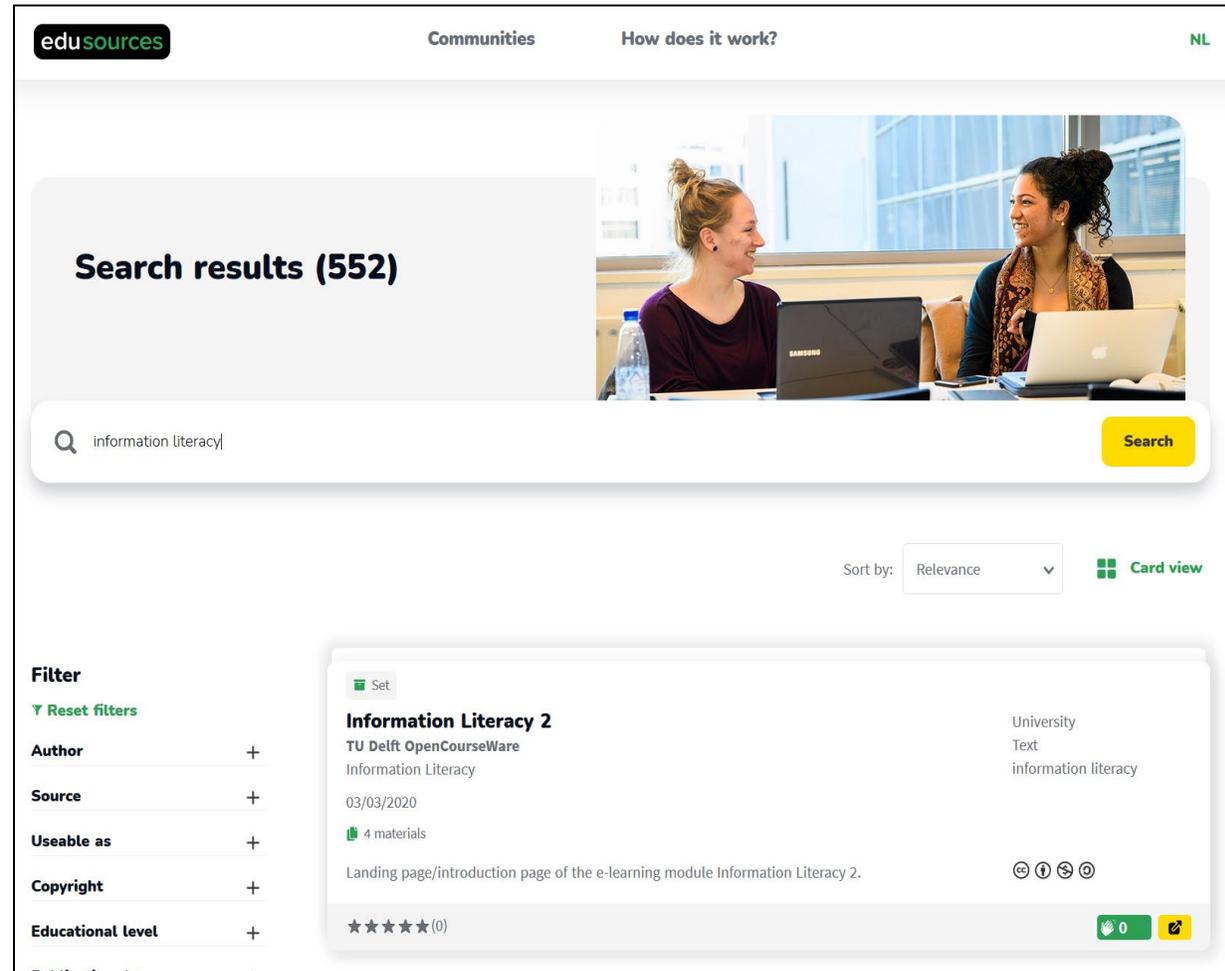


1. Creating awareness on different levels & policy
2. Offering support / professionalization (e.g., lecturers)
3. Offering a good infrastructure for sharing and reusing

# SHARING IL EDUCATIONAL MATERIALS IN EDUSOURCES

- Nationwide project – higher education libraries
- In cooperation with SURF \*)
- More than 400 materials entered

\*) SURF is the collaborative organisation for ICT *in Dutch education and research*



The screenshot shows the 'edu sources' website interface. At the top, there are navigation links for 'Communities' and 'How does it work?', and a language selector 'NL'. Below the navigation is a search bar containing the text 'information literacy' and a yellow 'Search' button. To the right of the search bar is a banner image of two women sitting at a table with laptops, smiling. Below the search bar, the text 'Search results (552)' is displayed. To the right of this text is a 'Sort by:' dropdown menu set to 'Relevance' and a 'Card view' button. Below the search results, there is a 'Filter' section with a 'Reset filters' link and several filter categories: 'Author', 'Source', 'Useable as', 'Copyright', and 'Educational level', each with a plus sign. To the right of the filter section is a detailed view of a search result for 'Information Literacy 2' by 'TU Delft OpenCourseWare'. This result includes the title, author, source, date (03/03/2020), a note that there are 4 materials, a description of the landing page/introduction page of the e-learning module, a star rating of 0, and a 'Set' button.

# SHARING IL EDUCATIONAL MATERIALS IN EDUSOURCES



- Encourage reuse (efficiency)
- Improve the quality of IL materials
- Increasing the availability of IL materials (quantity)

# DEVELOPMENT AND USE OF AN IL TAXONOMY

# FINDABILITY OF EDUCATIONAL MATERIALS

- Combination of free keywords and taxonomy

= controlled vocabulary in a hierarchical structure over a certain subject or concept

- To improve the findability: easier to enter a sub-topic
- Information Literacy: No suitable taxonomy still available until now



# TAXONOMY

## 1. Set goal and plan



**Steps based on:**

van Aalten, J., van der Linden, M., Sieverts, E., & Becker, P. (2017). *Maak het vindbaar: op schijven, sites en SharePoint* (pp. 1-332). Udoc.

Straits Knowledge (2012). *How to build a taxonomy*. Opgevraagd 20 april 2016 van: <http://www.greenchameleon.com/gc/guides/>

# TAXONOMY

## 2. Collecting concepts – analysis of content

- Comparison of IL-standards
- Wordcloud

Scopus (derived from RDF) <a href="#">link</a>	ACRL Framework <a href="#">link</a>	CILIP <a href="#">link</a>	Australian & New Zealand IL Framework <a href="#">link</a>	Kuhlthau Model <a href="#">link</a>	UNESCO <a href="#">link</a>	Metaliteracy characteristics (Moser & Joubert, 2014)	Common denominators	Taxonomy			
								Level 1	Level 2	Level 3	
1. Identify Recognize information need	Research as inquiry	1. Need for information	1. ... recognises the need for information and determines the nature and extent of the information needed	1. Initiation	1. Realize that a need or problem exists that requires info. for its satisfactory resolution	Stel vast	Determine information needs	?	1. Orientate and specify	• Orientation on information landscape • Value of information/data • Nature and appearance of information/data • Functioning and structure of the internet • Role and creation of networks • Individual in the information landscape	
	Information has value			3. Prefocus	3. Know how to determine if the needed info exists or not, and if it does not, go to Stage 5		Oriëntatie search		• Search for information		
3. Plan Construct strategies for locating		2. resources available		4. Focus Formulation Based on gathered information			Formulate (re)search questions	2. Plan and search 	• Selection of information resources and search systems • Selection of search terms		
4. Gather Locate and Access	Searching as strategic exploration	3. Find information	2. ... finds needed information effectively and efficiently	5. Collection Focused search	4. Know how to find needed info. if known to exist, and then go to Stage 6	Verkrijg toegang	Search		• Search for information		
5. Evaluate Review research process and compare and evaluate info + data	Authority is constructed and contextual	4. Evaluate resultaten	3. ... critically evaluates information and the information seeking process		7. Know how to organize, analyze, interpret, and evaluate info., including source reliability	Evalueer	Select / assess / evaluate results	3. Critically assess 	• Critical assessment of search results • Critical evaluation of search process	• Information processing (read, listen e.g.) • Assessment criteria relevance/reliability	
6. Manage Organize info professionally and ethically		8. Bebeer je bevindingen	4. ...manages information collected or generated		10. Know how to preserve, store, reuse, record and archive info. for future use	Gebruik	Organize / process	4. Organise and process 	• Organisation of process and search results • Cooperation (in teams)		
		6. Ethiek en verantwoordelijkheid in gebruik			11. Know how to dispose of info. no longer needed, and safeguard info. that should be protected	Begrijp			Ethical use of information		
7. Present Apply knowledge gained; presenting results, synthesis and create new knowledge	Scholarship as conversation. Scholarship as conversation.	7. Communiqueer en deel informatie	5. applies prior and new information to construct new concepts or create new understandings	6. Presentation	8. Know how to communicate and present info. to others in appropriate formats/ mediums	Werk samen	Present/ communicate	5. Publish and communicate 	• Publication of product		
		Information creation as a process	5. (Hoe te) werken met resultaten en ze te exploiteren		6. ... understanding and acknowledges, cultural, ethical, economic, legal, and social issues surrounding the use of information	9. Know how to utilize info. to solve problem, make decision, or meet need			Participeer		
					5. Know how to create, or cause to be created, unavailable info. (i.e. create new knowledge)	Publiceer	Synthesize use / create new knowledge	• Valorisation of findings (outreach)			



# TAXONOMY

## 3. Analyse facets en groups

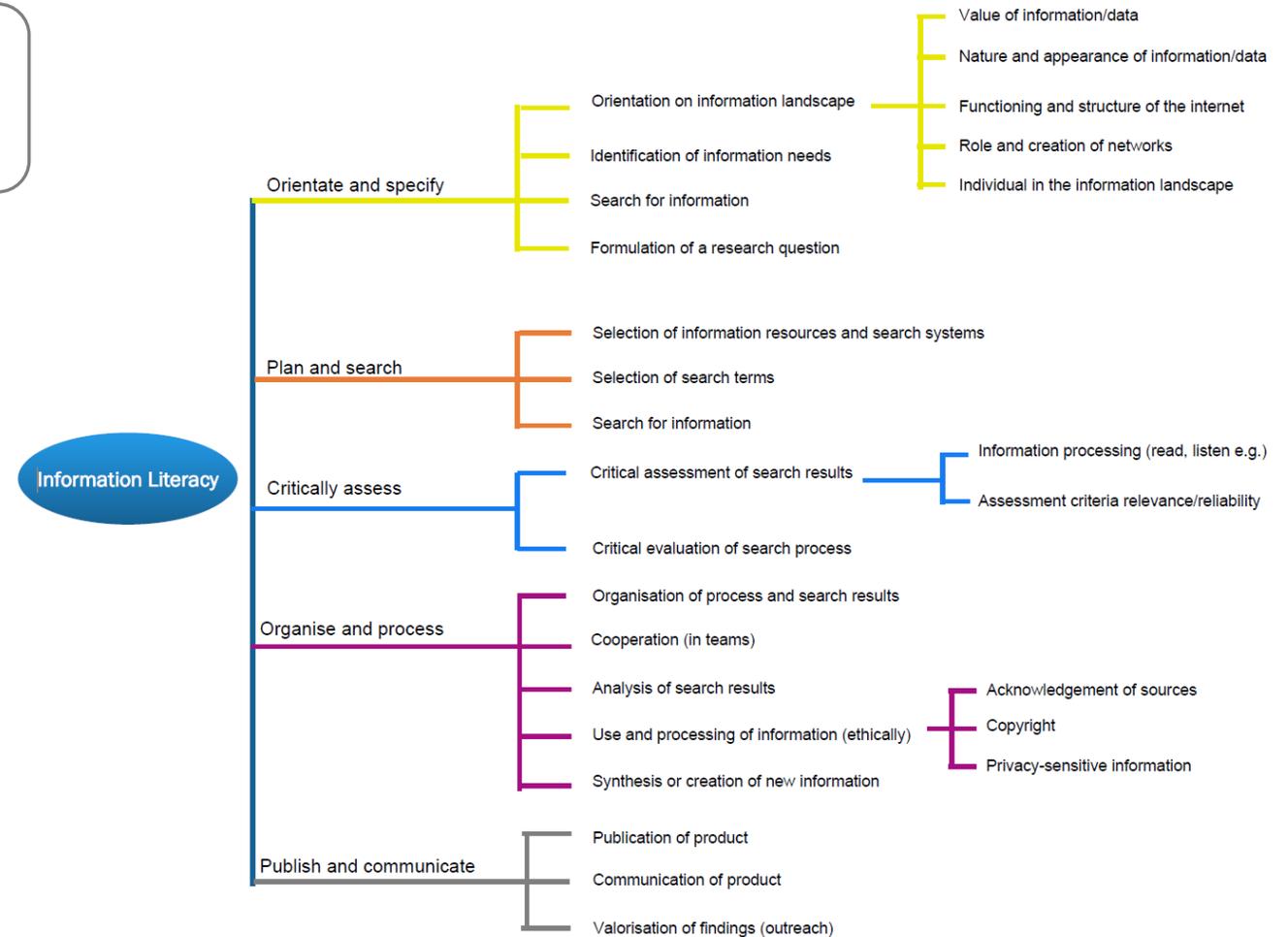
- Cardsorting (matching keywords & main facets)
- Cardsorting (matching keywords & sub facets)

Card placed in a facet (% of respondents who placed a card in a particular facet)

Card Name	PROVEN BY USERS																			
	Informatiebehoefte	Onderscheid in Informatiebronnen	Evaluatie resultaten	Citeren en refereren	Informatiebronnen	Selectie passende zoeksystemen	Evaluatie proces	Auteursrecht	Zoeksystemen	Selectie zoektermen	Zoekmanagemnt	Creatie van informatie	Onderwijsmethodie	Resultatenmanagement	Publicatie	Onderzoeksvraag	Zoektechnieken	Synthese van informatie	Term past megens in	
aanhalingstekens	0	0	0	0	0	0	0	0	0	8	0	0	0	8	0	0	83	0	0	0-20
abstracts	0	20	20	0	20	0	0	0	0	0	0	0	0	13	7	0	13	7	0	20-40
open access	0	31	0	6	0	0	0	31	0	0	0	0	0	31	0	0	0	0	0	40-60
achtergrondinformatie	7	14	0	7	64	0	0	0	0	0	0	7	0	0	0	0	0	0	0	60-80
actualiteit	0	8	46	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	15	80-100
alerts	9	0	0	0	0	0	0	0	0	0	27	0	0	27	18	0	0	0	18	
altmetrics	0	0	17	8	0	0	8	0	0	0	0	8	0	8	33	0	0	0	17	
antoniemen	7	0	0	0	0	0	0	0	0	64	0	0	7	7	0	0	14	0	0	
afbakening	7	0	0	0	0	0	0	0	0	14	0	0	43	0	0	0	21	7	7	
afbeeldingen	0	39	0	6	17	0	0	11	0	0	0	6	0	0	6	0	6	0	11	
APA	0	0	0	85	0	0	0	0	0	0	0	0	0	8	8	0	0	0	0	
artikelen	0	50	0	0	25	0	0	0	0	0	6	0	0	6	6	0	0	0	6	
asterisk	0	0	0	0	0	0	0	0	0	8	0	0	0	8	0	0	83	0	0	
auteursrecht	0	0	0	8	0	0	0	92	0	0	0	0	0	0	0	0	0	0	0	
autoriteit	0	8	69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	
betrouwbaarheid	0	12	59	0	6	6	6	6	0	0	6	0	0	0	0	0	0	0	0	
bibliografie	0	31	0	46	15	0	0	0	0	0	0	0	0	0	0	0	0	0	8	
bibliotheekcatalogi	0	20	0	0	7	27	0	0	33	13	0	0	0	0	0	0	0	0	0	
bibliotheken	7	20	0	0	33	0	0	0	20	0	0	0	0	0	0	0	0	0	20	
boeken	0	50	0	0	25	6	0	0	6	0	0	6	0	0	6	0	0	0	0	
Boelaanse operatoren	0	0	0	0	0	0	0	0	0	8	0	0	0	17	0	0	0	75	0	
bouwsteenmethode	0	0	0	0	0	0	0	0	0	8	0	0	0	85	0	0	0	8	0	

# TAXONOMY

## 4. Process results – final taxonomy



# TAXONOMY

## 5. Preparation taxonomy for inclusion in repository

- Relations – definitions - synonyms

	A	B	C	D	E	F
1	code 1	Competence group	code2	Core concept	code3	Partial concept
2	older	(Informative)	skos:notation	(Informative)	skos:broaden	(Informative)
3	1.0	Orientate and specify	1.1	Orientation on information landscape	1.1.1	Value of information/data
4	1.0		1.2	Identification of information needs	1.1.2	Nature and appearance of information
5	1.0		1.3	Search for information	1.1.3	Functioning and structure of the information landscape
6	1.0		1.4	Formulation of a research question	1.1.4	Role and creation of networks
7	1.0		2.1	Selection of information resources and search systems	1.1.5	Individual in the information landscape
8	1.0		2.2	Selecteren zoektermen		
9	1.0		2.3	Search for information		

	A	B	C	D	E	F
1	Code1	Skills	Description	URI	UUID	numbering
2	skos:notation	skos:prefLabel	skos:definition	skos:identifier	(informatief)	skos:hiddenlabel
3	1.0	Orientate and specify	<b>Orientation:</b> Gaining insight into and exploring the possibilities of a subject. You do this by collecting broad information and it helps to formulate a good (research question). Specify: Defining the requirements that the changed or new information provision must meet. (Source: <a href="https://labyrinth.rienkjonker.nl/lexicon/terminologie">https://labyrinth.rienkjonker.nl/lexicon/terminologie</a> )	<a href="https://purl.edustandaard.nl/concept/2b1ad07f-d8b0-49ab-b4d2-ecf319f4001">https://purl.edustandaard.nl/concept/2b1ad07f-d8b0-49ab-b4d2-ecf319f4001</a>	2b1ad07f-d8b0-49ab-b4d2-ecf319f4001	ov_01
		Plan and search	<b>Planning:</b> You can devise strategies for locating information and data. (Source: <a href="https://www.sconul.ac.uk/sites/default/files/documents/researchlens.pdf">https://www.sconul.ac.uk/sites/default/files/documents/researchlens.pdf</a> ) <b>Search</b> [gather information in context]: You can find information and data and know how to access it. (Source: <a href="https://www.sconul.ac.uk/sites/default/files/docum">https://www.sconul.ac.uk/sites/default/files/docum</a>	<a href="https://purl.edustandaard.nl/concept/598b9817-a153-400e-8710-78acadf70cbe">https://purl.edustandaard.nl/concept/598b9817-a153-400e-8710-78acadf70cbe</a>		



linked data; it can also be included in other platforms

# TAXONOMY

## 6. Taxonomy (via Kennisnet) in Sharekit

VAKVOCABULAIRE Surfsharekit

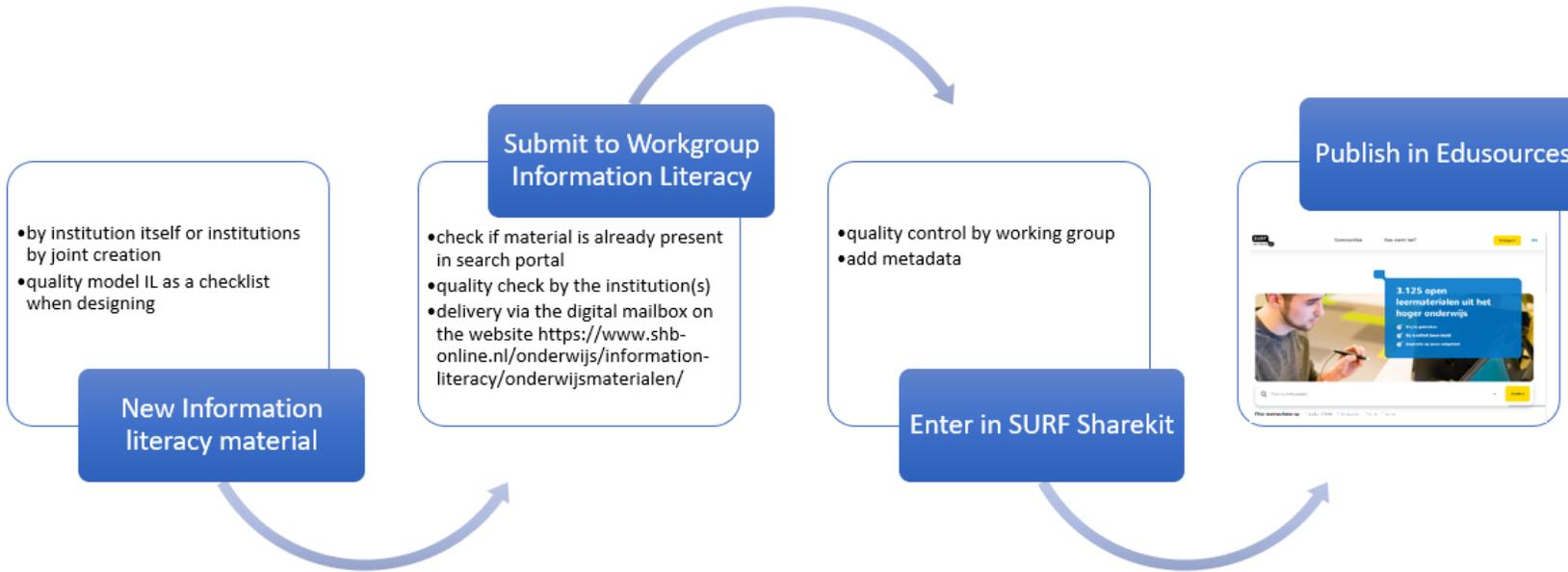
- Informatievaardigheid vocabulaire 2020 - Organiseren en verwerken X
- Informatievaardigheid vocabulaire 2020 - Oriënteren en specificeren X
- Informatievaardigheid vocabulaire 2020 - Plannen en zoeken X
- Informatievaardigheid vocabulaire 2020 - Kritisch beoordelen X

Vaktherapie vocabulaire 2020 - Ethiek

Vaktherapie vocabulaire 2020 - Onderzoek

<p><b>Educational level</b> University of applied science</p> <p><b>Professional vocabulary</b> Informatievaardigheid vocabulaire 2020 Oriënteren en specificeren Plannen en zoeken</p> <p><b>File type</b> Text</p>	<b>Training PubMed</b>	Edusources
	<b>Author</b>	<b>Publisher</b>
	Team PubMed	Information Literacy
	<b>Quality</b>	
	0	0
		2

# COLLECTION AND PUBLICATION



Step-by-step plan for the publication of information literacy learning materials on SURF Search Portal: Edusources

# FOLLOW UP?

- Follow-up project in the Netherlands
  - Expansion of topics
  - Focus on reuse
  - Automatic keyword assignment through AI based on the taxonomy
  - Connecting institutional repositories
- Sharing Information literacy Educational materials in Europa (UK, Ireland, Scotland, Germany, Austria, France, the Netherlands)
- Use taxonomy to develop digital badges for IL



# DIGITAL BADGES

# WHAT IS A BADGE IN EDUCATION?

## [Draft definition by EU Commission \(August 2020\)](#) :

*"A micro-credential is a recognised proof of the learning outcomes that a learner has achieved following a short learning experience, according to transparent standards and requirements and upon assessment.*

*The proof is contained in a certified document that lists the name of the holder, the achieved learning outcomes, the assessment method, the awarding body and, where applicable, the qualifications framework level and the credits gained. Micro-credentials are owned by the learner, are shareable, portable and may be combined into larger credentials or qualifications."*

The 'certified document' can take various forms, including a digital **badge**

Micro-credentials open up education to all; provide opportunities for life-long learning

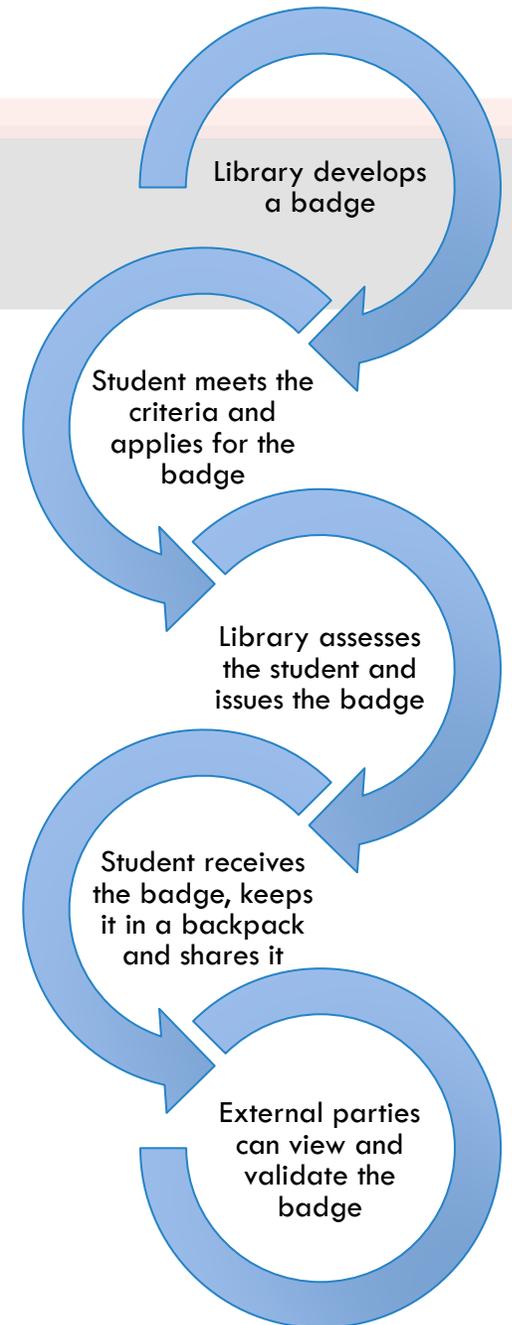
# DIGITAL BADGES AND INFORMATION LITERACY

Libraries (in higher education) can develop and issue badges for IL training

## *Examples / Links*

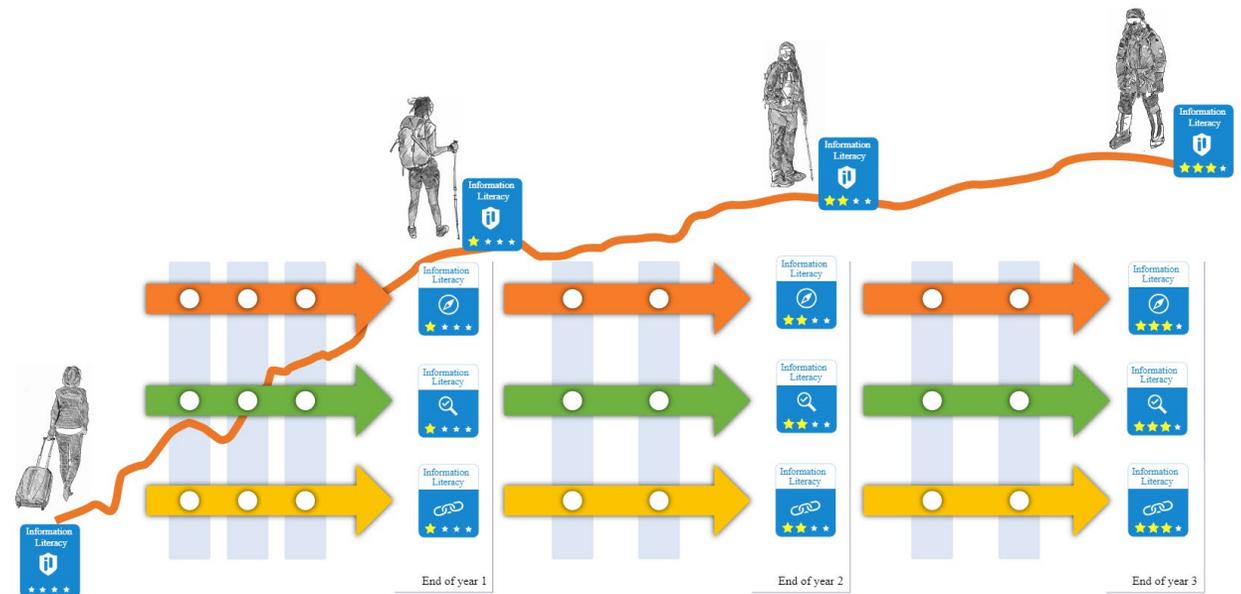
- [PennState University Libraries](#)
- [ACRL Digital Badges Interest Group](#)
- [Wageningen University & Research - Library](#)

- Reward for extracurricular learning
- Gamification
- Badges help to communicate in a transparent way which training courses you offer
- Students might learn more consciously and effective



# EXAMPLE: DEVELOPMENT OF IL BADGES AT WUR LIBRARY

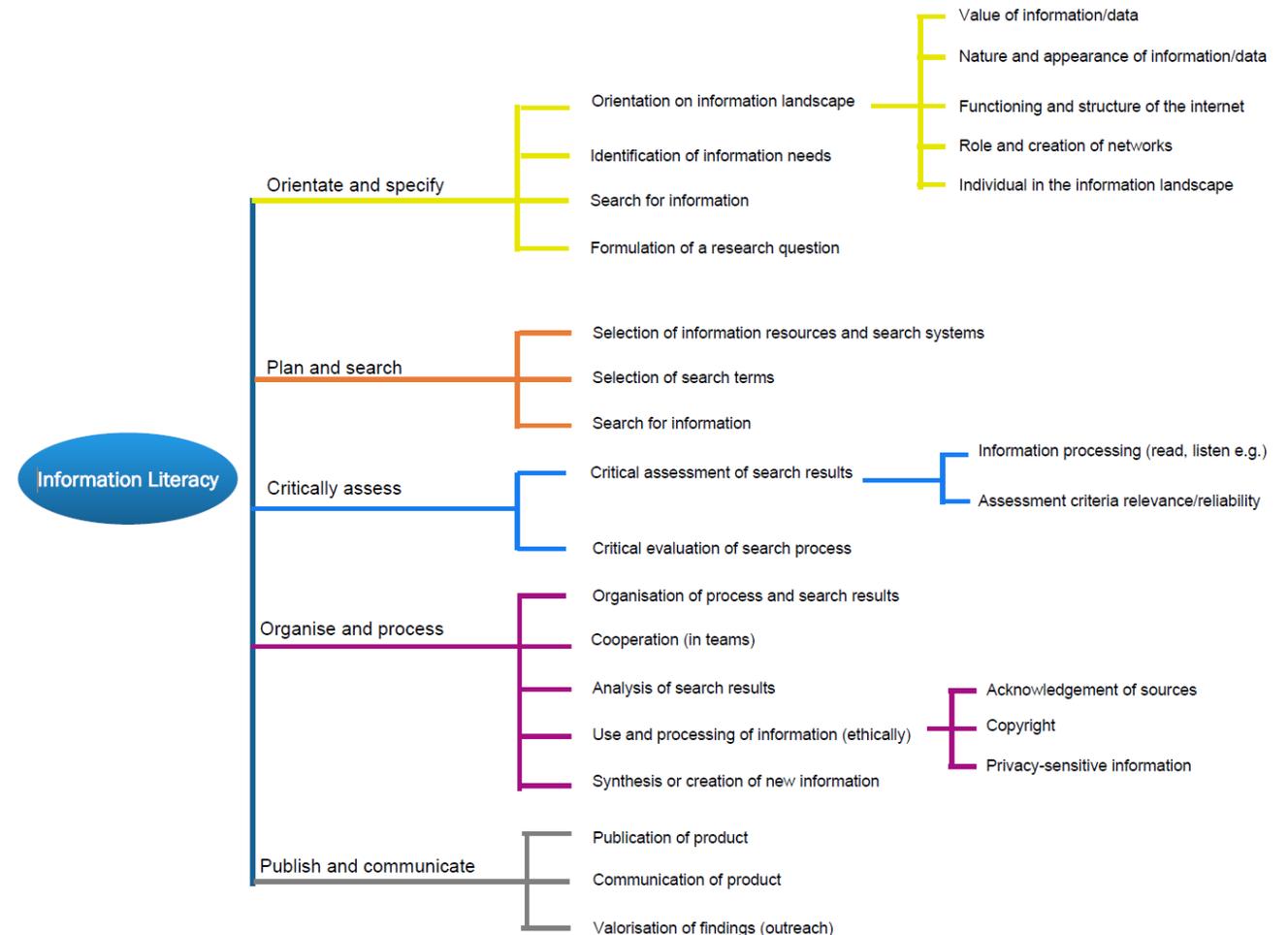
1. Based on the [SCONUL framework](#), WUR Library defined a [matrix](#) with six competency areas and corresponding **learning outcomes**
2. The six competency areas in the matrix were merged into three **badges** (Orientation, The Search, and The Results)
3. One reaches the **levels 1, 2 and 3** before getting the overarching badge



The Information Literacy learning trajectory at Wageningen University with Edubadges, within the bachelor cycle (adapted from a drawing of Edo-Jan Meijer, CC BY-NC-SA)  
More info: <https://www.wur.nl/en/Library/Students/IL/Pilot-Information-Literacy-Edubadges.htm>

# CROSS-INSTITUTIONAL IL BADGES?

- Working group IL: explore the development of cross-institutional open badges for IL
- 6 (applied) universities in NL
- The IL taxonomy provides a controlled vocabulary and structure which helps to
  - Discuss and align on learning outcomes across the institutions
  - Cluster learning outcomes in badges and levels
  - Share and find newly created learning materials in Edusources



# CROSS-INSTITUTIONAL IL BADGES?

So far:

- Learning outcomes: difficult to completely align
- Mandate: libraries are not in charge of policies on badges in their institution; uncertain implementation

Possible mindsets:

- Working group IL as endorser or even provider of IL badges, instead of developing cross-institutional badges at institutions?
- Working group IL helping institutions to develop their own IL badges and share the associated learning materials in Edusources using the taxonomy?



## MORE INFORMATION

Harrie van der Meer | [h.a.l.van.der.meer@hva.nl](mailto:h.a.l.van.der.meer@hva.nl) | +31 6 290 75 998

Renée de Waal | [renee.dewaal@wur.nl](mailto:renee.dewaal@wur.nl) | +31 317 481027

