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BRAIN@WORK - Information competence as booster for prospective  
scientists

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# The 5PMIS framework

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C1 Brain@Work Program in Liege

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**BRAIN@WORK**

# Information literacy

- Concept dating back to the late 1980s
- Multiple French translations
- « Competences » related to...
  - Recognize a need for information
  - Search and locate information
  - Evaluate
  - Make the most of information
  - Use (for instance to produce new contents)

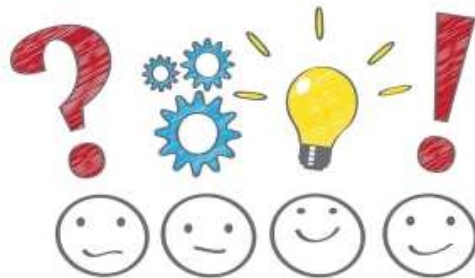
# Information literacy

- Include critical thinking, ethics, policies...
- In relation to disciplines, citizenship, lifelong learning...

(CILIP Information Literacy Group, 2018, p.3)

# Information literacy & university

- Increasing use of digital technology  
(Michaut et Roche, 2017)
- Information literacy (IL) → a real pedagogical concern at the university



# Information literacy & ULiège Library

- Long-standing concerns
    - Active participation in working groups
      - ✓ 1989-1999 : Users Training Group, created at the University of Liège by several members of the Belgian Association for Documentation
      - ✓ 1999-2010 : *EduDOC* Group (not-for-profit organization)
      - ✓ 2012- : [InfoLit Working Group at ULiège Library](#)
      - ✓ 2015- : ILIB Working Group at ARES \*
- \* Academy of Research and Higher Education

# Information literacy & ULiège Library

- Long-standing concerns
  - Active participation in the training of students, PhD students and members of the University

A few numbers (2018)

- ✓ 30 courses scheduled at study programmes for which a librarian is the holder or co-holder
- ✓ 23 courses scheduled at study programmes requiring an intervention from at least one librarian
- ✓ 42 optional training sessions dedicated to PhD students (transversal training)
- ✓ 51 optional training sessions for a total of 125 hours

- More and more missions for librarians

→ Constitution of a working group : InfoLit

### Objectives

- ✓ Internal organisation and consultation (→ quality of our actions)
- ✓ Institutional visibility of our actions
- ✓ Promotion of IL (authorities, teachers, researchers, colleagues...)
- ✓ Collaboration with teachers (call for...)

## GT InfoLit : one of the first concerns...

- Quality and consistency of trainings

→ Formalize training objectives and contents

Rely on a framework including knowledge, skills and attitudes required to be scientific information literate

- in Human Sciences, Sciences & Technology and Health Sciences
- useful for all study levels

But no framework meeting our needs...

→ development of a framework made in Uliege Library



# Framework made in ULiege Library: working method

- Team: seven members of the InfoLit working Group
  - 11 meetings (between July 2015 and May 2017)
  - Use of collaborative tools
- Elaboration process
  - Survey of 32 teachers (involved in IL at ULiege)
  - Analysis of eight existing frameworks (see list at the end)
  - Analysis of our training content



- Peer reviewing

- First step : ULiege members

→ Modifications... then...

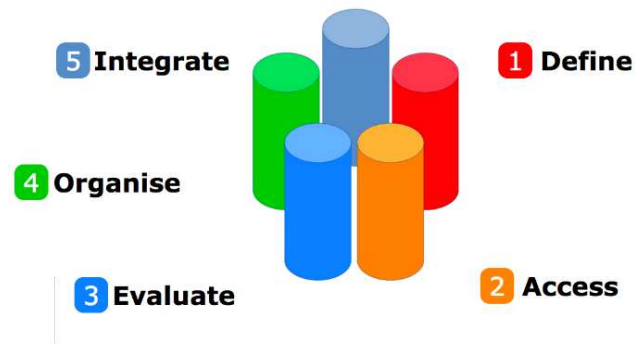
- Second step : ULiege members and others

! Important adjustments thanks to these proofreadings !



# Framework made in ULiege Library: the 5PMIS

5 pillars = main learning objectives



And 21 primary resources = knowledge, skills and attitudes

# Activity using Wooclap

(= an interactive voting system)



- How to participate?

Go to [www.wooclap.com/MEYJHP](http://www.wooclap.com/MEYJHP)

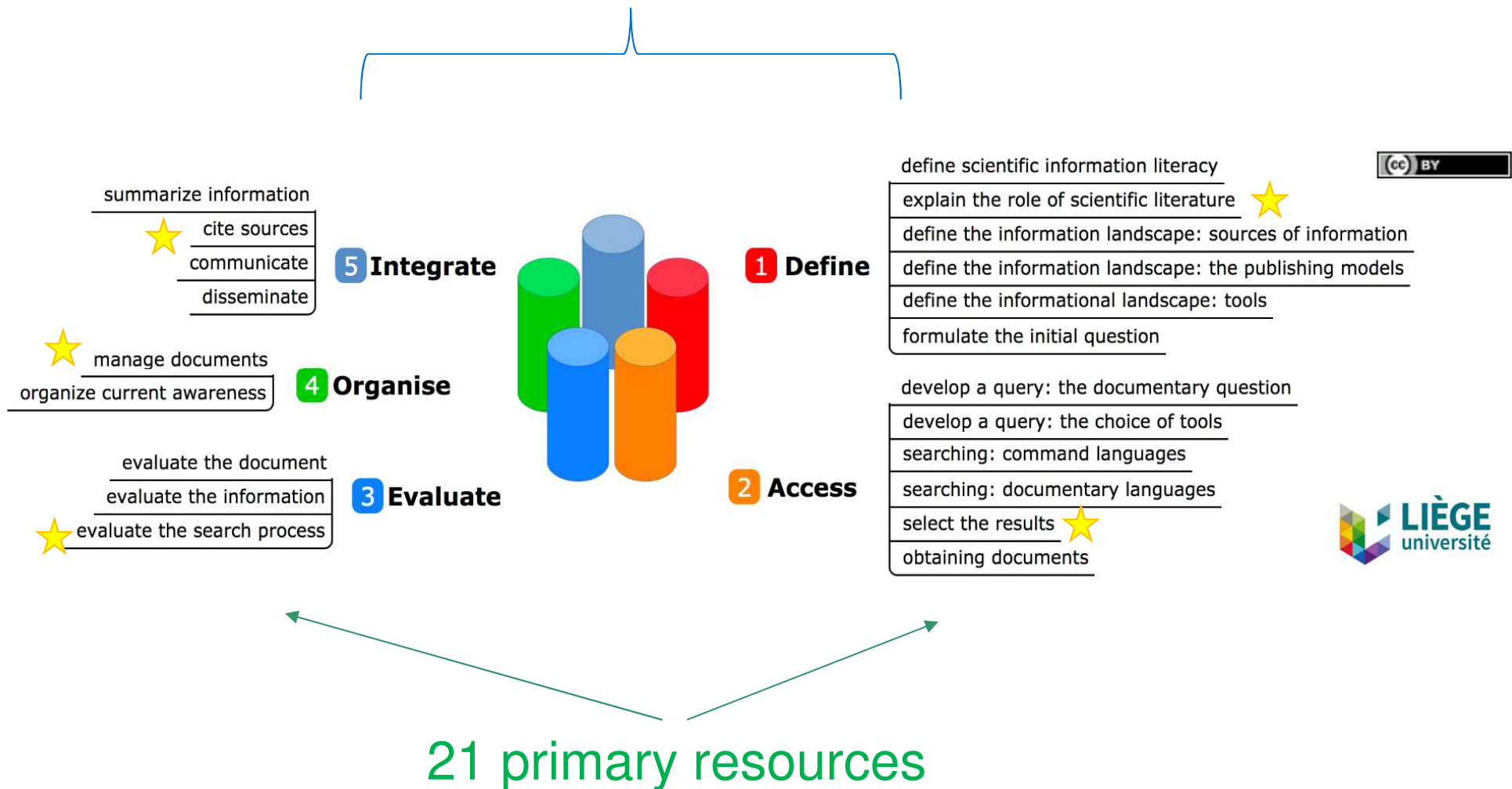
# Activity using Wooclap



- Question n°1

Link to each pillar (learning objective)  
a primary resource (knowledge, skill, attitude)

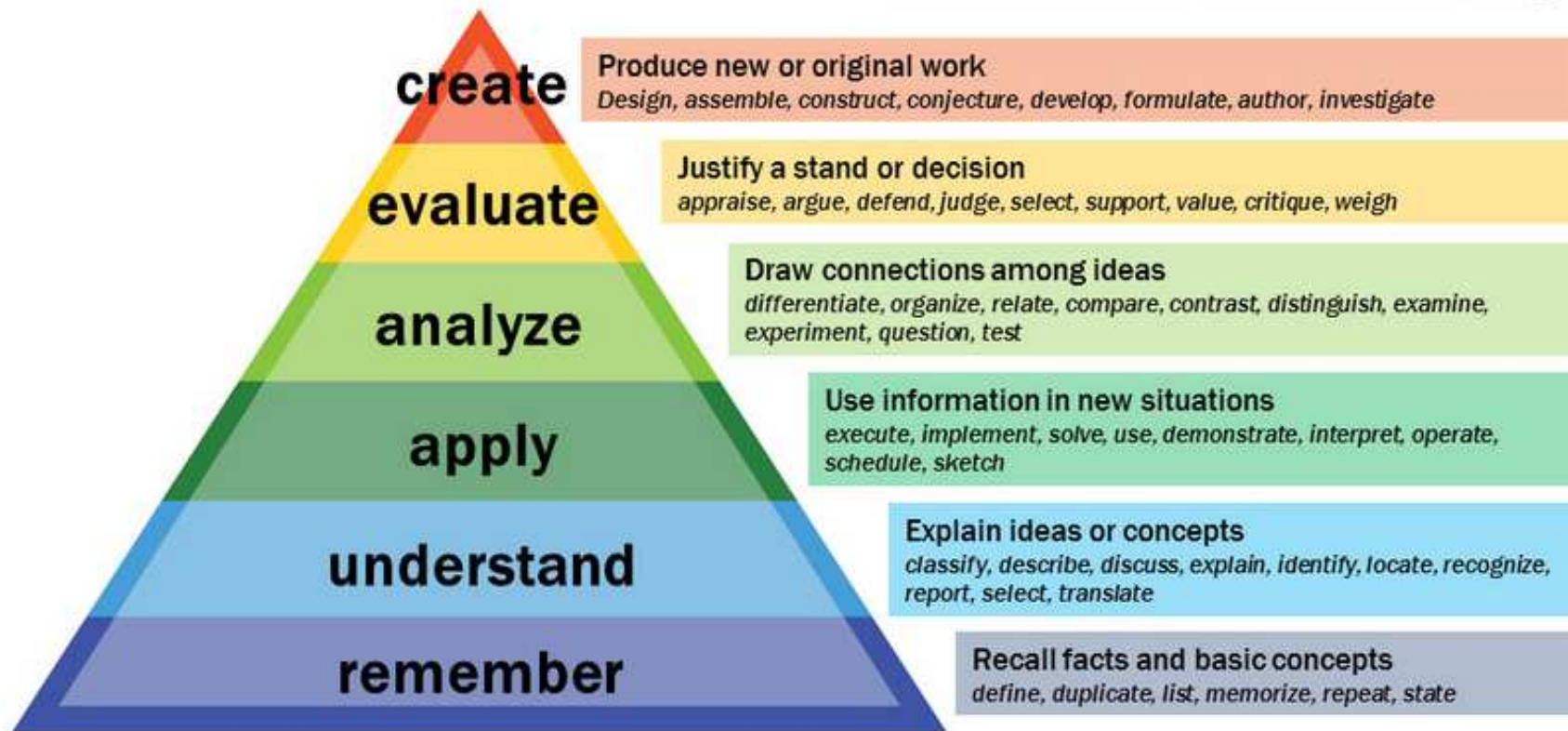
# 5 pillars



# Framework made in ULiège Library: the 5PMIS

- **5 pillars** = main learning objectives
- **21 primary resources** = knowledge, skills and attitudes
- **64 operational resources**
  - Described in using Bloom taxonomy (De Landsheere & De Landsheere, 1978)  
= list of verbs related to knowledge, skills and attitudes
  - Divided into three "levels of development" :  
novice, intermediate, competent

# Bloom's Taxonomy



Vanderbilt University Center for Teaching



# Activity using Wooclap



- Question n°2

In pillar 1 (= Define), there is the primary resource "Define the information landscape: sources of information"

In your opinion, do the following operational resources need to be addressed at the novice, intermediate or competent level?

## Pillar 1: Define

One pillar

### 1.1. Define scientific information literacy

One primary resource

1. explain that scientific information literacy is part of the scientific process and professional practice
2. explain that being scientific information literate requires the mastering of specific resources

Two operational resources

### 1.2 Explain the role of scientific literature

1. explain that publishing scientific results is part of the scientific research process
2. illustrate with examples that scientific publication is used by scientists to communicate
3. explain that researchers can be evaluated on the basis of their publications
4. explain what a scientific question or research issue is
5. explain that the scientific approach guarantees the quality of information

### 1.3. Define the information landscape: sources of information

1. explain that scientific literature is characterized by its validation process
2. identify the types of documents (journals, books, etc.) specific to the discipline, list the main characteristics of these documents (including medium) ★
3. explain the role of scientific publishers, editorial boards and reviewers in the scientific publication process ★
4. describe the role of bibliometric tools in the ranking of journals
5. list bibliometric indicators specific to the discipline
6. estimate the role and limitations of bibliometric indicators ★



## In the French version of the 5PMIS ...



### 1.4. Définir le paysage informationnel : les circuits de l'édition

(1)	(2)	(3)
*		décrire le rôle d'une maison d'édition et les coûts de l'édition scientifique
*		expliquer les principes du libre accès
	*	questionner les coûts de l'édition scientifique ( <i>Article Processing Charges...</i> )
	*	expliquer les dérives de l'édition scientifique (éditeurs hybrides, éditeurs prédateurs...)
		* décrire les politiques d'archivage et de droit d'auteur
		* estimer l'intérêt des nouveaux vecteurs de communication scientifique (blog de chercheurs, carnets de recherche, diffusion de <i>preprint...</i> )

### 1.5. Définir le paysage informationnel : les outils

(1)	(2)	(3)
*		identifier le catalogue ou l'outil <i>discovery</i> de la bibliothèque, en décrire les usages et expliquer son intérêt et ses limites
*		identifier les autres catégories d'outils de recherche documentaire/d'information, en décrire les usages et expliquer leur intérêt et leurs limites
	*	identifier les outils de recherche documentaire/d'information spécialisés dans la discipline, en décrire les usages et expliquer leur intérêt et les limites (par exemple : les bases de données spécialisées et les corpus)

### 1.6. Formuler la question initiale

(1)	(2)	(3)
*	*	*

formuler sa question de recherche d'information (avec une complexité croissante de la question)



## In the French version of the 5PMIS ... entry by the level of development



### Entrée par niveaux de développement : Novice

#### Premier pilier : Définir

##### 1.1. Définir la maîtrise de l'information scientifique

- ✓ expliquer que la maîtrise de l'information scientifique s'intègre dans le processus de la démarche scientifique et de la pratique professionnelle
- ✓ expliquer que la maîtrise de l'information scientifique nécessite d'acquérir des ressources spécifiques

##### 1.2. Expliquer le rôle de la littérature scientifique

- ✓ expliquer que la publication des résultats fait partie du processus de la recherche scientifique
- ✓ illustrer à l'aide d'exemples que la publication scientifique est utilisée par les scientifiques pour communiquer
- ✓ expliquer que les chercheurs peuvent être évalués sur base de leurs publications

##### 1.3. Définir le paysage informationnel : les sources d'information

- ✓ expliquer que la littérature scientifique se caractérise par son processus de validation
- ✓ identifier les types documents (revues, livres...) spécifiques à la discipline - énumérer les principales caractéristiques de ces documents (y compris les supports)

##### 1.4. Définir le paysage informationnel : les circuits de l'édition

- ✓ décrire le rôle d'une maison d'édition et les coûts de l'édition scientifique
- ✓ expliquer les principes du libre accès

##### 1.5. Définir le paysage informationnel : les outils

- ✓ identifier le catalogue ou l'outil *discovery* de la bibliothèque, en décrire les usages et expliquer son intérêt et ses limites
- ✓ expliquer l'intérêt et les limites de l' de l'institution
- ✓ identifier les autres catégories d'outils de recherche documentaire/d'information, en décrire les usages et expliquer leur intérêt et les limites

##### 1.6. Formuler la question initiale

- ✓ formuler sa question de recherche d'information (avec une complexité croissante de la question)

## The French version of the 5PMIS

<https://infolit.be/5PMIS/>

The English version is coming...



## Good to know...

- Encountered difficulties
  - terms to use: pillars, competences... ?
  - Disciplinary specificities
- Ethical attitude and critical thinking  
Transversal resources that constitute essential postures in the mastery of scientific information



# Good to know...

- 5PMIS specificities

- Scientific approach



- Multidisciplinary  
and level of development for the operational resources



- « Practical tool » for our courses / training sessions



- Communication and information tool



# QUESTIONS





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# Thank you

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