What is digital literacy?
A matter of indicators and a vision for the future

Dunja Marija Gabriel
National and University Library in Zagreb, Croatia
dgabriel@nsk.hr

Jasenka Pleško
President of the Croatian Library Association
jasenka.plesko@kgz.hr
Library 4.0

- IoT integration
- personalization
- digital resource accessibility
- artificial intelligence
- data-driven decision making
- cutting-edge technologies
- algorithms
- cloud computing
- data analytics

Gabriel, D. M.; Pleško, J.; 32nd EBLIDA Annual Council and Conference, Lisbon, 2024
DIGITAL LITERACY
lays out 5 digital competence areas

Definition of Digital Competence:
- combination of knowledge, skills, attitudes
- involves the confident, critical and responsible use of (and engagement with) digital technologies for learning at work and for participation in society

Gabriel, D. M.; Pleško, J.; 32nd EBLIDA Annual Council and Conference, Lisbon,
Europe's Digital Decade (2020 – 2030) - the course towards a digitally empowered Europe by 2030


Digital literacy

https://joint-research-centre.ec.europa.eu/digcomp/digcomp-framework_en

- Digital literacy is measured by the **digital skills indicator**, which is a composite indicator based on selected activities performed by individuals on the internet in the specific areas:
  - until 2019, these included information, communication, problem solving and software
  - from 2021 was added safety as an additional area
- As of 2021 the following overall **levels of skills** are measured: no skills, limited skills, narrow skills, low skills, basic skills and above basic skills
- The data for this indicator comes from the **EU survey on the use of ICT in households and by individuals**: annual survey conducted since 2002, collecting data on the use of ICT (e.g. the internet, e-commerce, e-government, privacy and protection of personal data, Internet of Things (IoT), Green ICT and digital skills)
Library 4.0 in Croatia

Figure 1. At least basic overall digital skills (% of all individuals), 2023. (56% of people in the EU; 59% in Croatia)

Figure 2. Enterprises using an AI technology (% of enterprises), 2023. (33.2% EU; 51.7% Croatia)

Legal framework (1) for the operation of digital libraries and collections

- **Croatian Library Act** (2019, updated in 2022 and 2024)
  
  [https://narodne-novine.nn.hr/clanci/sluzbeni/2019_02_17_356.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2019_02_17_356.html)

  - includes legal deposit of the digital materials in the National and University Library
  - legal provisions laying down regular, free and prompt delivery of 9 copies of all print and non-print publications (meaning books, audio books, audiovisual and electronic materials like compact discs, DVDs, magnetic tapes, floppy disks)
  - online materials (e-books, e-serials, websites, webpages etc.) and digitized copies of library materials

- **Regulations on Legal deposit** (2020)
  
  [https://narodne-novine.nn.hr/clanci/sluzbeni/2020_06_66_1318.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2020_06_66_1318.html)

  Article 5 - NUL in Zagreb takes care of the protection and long-term preservation of legal deposit of digital and digitized materials

  Article 8 - one copy of the online material is delivered to the NUL in Zagreb
Legal framework (2)  
for the operation of digital libraries and collections

- **Standard for digital libraries** (2021)  
  [https://narodne-novine.nn.hr/clanci/sluzbeni/2021_09_103_1836.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2021_09_103_1836.html)

  Article 4 - The National and University Library in Zagreb is in charge of all digital libraries in the Republic of Croatia that perform the tasks of acquisition, digitization, storage, processing, making available for use and other types of business with digital library material.

- **Regulations on the protection, revision and write off library materials** (2023)  
  [https://narodne-novine.nn.hr/clanci/sluzbeni/2023_03_27_452.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2023_03_27_452.html)

  Article 10 - NUL in Zagreb is obliged to create a strategy and a plan for the protection, storage and long-term preservation of digital library material as part of the national system of protection, storage and long-term preservation of digital materials.

- **Guidelines for digitization of cultural heritage** (2020, updated in 2023)  

  (Annex: Instructions for the preparation of materials for digitization)
National and University Library in Zagreb - organisational structure

Department:
● Croatian Institute for Librarianship

Divisions:
● Libraries and Librarianship Development Division
● **Croatian Digital Library Development Division** (operates from 2016)
● Academic Centre and Continuous Professional Development Division

Ministry of Culture and Media in July 2022. established National Service for Digital Libraries which operates in accordance with the Standard for Digital Libraries (2021)

**National Service for Digital Libraries** is responsible for all digital libraries in Croatia (refers to digital libraries, repository collections) that perform reception, acquisition, digitization, storage, processing, use and other tasks with digital library material.
National and University Library in Zagreb

Register of digital collections and copies (2024):

● under development

● central place for gathering digital collections with information about all libraries that contain digital libraries and/or collections, digitization projects, equipment and important documents for the digitization of materials

● leads to better coordination of digitization of library materials

Gabriel, D. M.; Pleško, J.; 32nd EBLIDA Annual Council and Conference, Lisbon, 2024
“e-Culture – Digitization of cultural heritage" 2019 - 2023

• The Ministry of Culture and Media implements the project in cooperation with four project partners, the Croatian Radio and Television, the Croatian State Archives, the Museum of Arts and Crafts, and the National and University Libraries in Zagreb

• co-financed within the Operational Program Competitiveness and Cohesion 2014-2020 from the European Fund for Regional Development

• **Guidelines for digitization of cultural heritage** were created as part of the project - the goal of the Guidelines for digitization of cultural heritage is to establish and encourage a systematic and uniform approach to the digitization of materials in cultural institutions and to create unique and harmonized norms and specifications regarding the digitization process and parameters
Results of the project:

• equipment for the digitization of materials was acquired
• Central system for the long-term storage of digital cultural heritage was established in the Shared Services Center (State Cloud)
• e-Culture portal was created and is intended for the digital unification of data on the digital materials of Croatian cultural institutions
• metadata aggregator for Europeana was established
• other elements of system integration and metadata exchange were built for better accessibility of the materials of Croatian institutions to international users and the promotion of Croatian cultural heritage and the Croatian language abroad
• within the project 20 libraries are registered in the e-Culture system
• around half a million pages have been digitized
“e-Culture – Digitization of cultural heritage" 2019 - 2023

What after the end of the project implementation?

- establish new workflow into the libraries
- continue to digitization of materials on equipment acquired through the project (4 scanners)
- continue current and retrospective storage of digital objects in the Central system for the permanent storage of digital cultural heritage
- continue publishing digital materials on the e-Culture portal
- implementation of the new application for receiving e-legal deposit (eOP)
- creation of virtual exhibitions and promotion of the System
- continue with education for inclusion of libraries in the Central System in order to store digitized materials in the secure repository
Library 4.0 - Intelligent Library

- project “e-Culture – Digitization of cultural heritage” of the Ministry of Culture and Media (2019 - 2023)
- preservation of a legal deposit of the digital materials in National and University Library in Zagreb
- application eZaKi of Zagreb City Libraries
Zagreb City Libraries- eZaKi application

- With your eZaKi profile you can:
  - view and modify your personal data
  - pay online
  - view your reservations, loan history and debts
  - search and browse the catalog
  - borrowing and downloading e-books and audio books

- The eZaKi application is available for use via the website and/or by installing the mobile application.
Croatian Library Association

- **Information Technology Commission** - The primary purpose of the Information Technology Commission is to monitor standards, regulations, principles and practices in the field of information technology in librarianship, and to translate and develop guidelines for their application in Croatia. From this basic purpose comes the work on the permanent education of librarians for the application of information technology in order to improve the work of libraries.


- **Libraries in the Digital Age (LIDA)** - conference addresses the changing and challenging environment for libraries and information systems and services in the digital world.
Commission for Education and Continuous Professional Development of the Croatian Library Association conducted a survey from May to September 2021 with the aim of determining what jobs librarians perform and how they self-assess their competencies.
Purpose of the survey:

• to examine in which segments there was a need for additional education and improving the knowledge and skills of librarians with regard to everyday life changes and challenges of modern society
The questions in the survey were divided into:

- questions related to demographic data and librarian jobs:
  - professional degree
  - type of library
  - job title
  - years of work in the library
  - level of responsibility

- questions about scope of work with possible answers:
  - I do not perform this task at all
  - I rarely perform this task
  - I frequently perform this task
  - I perform this task daily
  - this is the main task I perform

- questions to evaluate competences for the tasks which are performed:
  - I mostly lack competencies.
  - I do not have enough competencies and the possibility of acquiring them.
  - I do not have enough competencies, but I have the possibility of acquiring them.
  - I have sufficient competencies.
  - I have excellent competencies.
Respondent's type of library

- National and university library: 65
- Special: 42
- Scientific: 13
- Higher education (university): 45
- Higher education (faculty, departmental): 79
- Public library: 362
- School library: 194

Gabriel, D. M.; Pleško, J.; 32nd EBLIDA Annual Council and Conference, Lisbon, 2024
362 respondents from public libraries:

86% are women
80% are MSc
5% are Ph.D
90% passed state professional exam for librarian
54% have 21-25 years of work
Age of the respondents

- Older than 65: 3
- 56 - 65: 55
- 46 - 55: 92
- 36 - 45: 137
- 26 - 35: 69
- 18 - 25: 6
How many employees with professional librarian qualifications are in the library?

- More than 30: 73
- 16-30: 70
- 6-15: 105
- 2-5: 95
- I am the only one employed: 18
Developing and managing library collections: Digitization

• Storing of digital materials on local library computers
  • do not perform task 53,5%
  • do not have enough competencies 51%
  • have the possibility of acquiring competencies 18%

• Ensuring access to materials
  • perform task frequently or daily 72,5%
  • have sufficient competencies or have excellent competencies 73%
  • have the possibility of acquiring competencies 7,5%
Developing and managing library collections: Digitization

<table>
<thead>
<tr>
<th>Activity</th>
<th>Do not perform this task at all</th>
<th>Do not have enough competencies</th>
<th>Have the possibility of acquiring competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storing of digital materials on local library computers</td>
<td>53.5%</td>
<td>76.5%</td>
<td>35.7%</td>
</tr>
<tr>
<td>Ensuring access to materials</td>
<td>7%</td>
<td>9%</td>
<td>41%</td>
</tr>
</tbody>
</table>

Gabriel, D. M.; Pleško, J.; 32nd EBLIDA Annual Council and Conference, Lisbon, 2024
## Developing and managing library collections: Digitization

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Percentage Who Do Not Perform</th>
<th>Percentage Who Do Not Have Enough Competencies</th>
<th>Percentage Who Have the Possibility of Acquiring Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selection and preparation of materials for digitization</td>
<td>68.5%</td>
<td>76.5%</td>
<td>35.7%</td>
</tr>
<tr>
<td>Managing copyright and related rights for distribution of digital materials</td>
<td>73%</td>
<td>69.5%</td>
<td>34.5%</td>
</tr>
<tr>
<td>Working with a scanner or a similar device</td>
<td>62.5%</td>
<td>70.9%</td>
<td>39.2%</td>
</tr>
<tr>
<td>Processing of digitized materials (metadata)</td>
<td>72.5%</td>
<td>69%</td>
<td>31%</td>
</tr>
</tbody>
</table>

Gabriel, D. M.; Pleško, J.; 32nd EBLIDA Annual Council and Conference, Lisbon, 2024
### Developing and managing library collections: Digitization

<table>
<thead>
<tr>
<th>Task</th>
<th>Do not perform this task at all</th>
<th>Do not have competencies</th>
<th>Have the possibility of acquiring competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creating an interface for accessing, tools for searching and viewing digitized materials</td>
<td>78.5%</td>
<td>58.5%</td>
<td>25.5%</td>
</tr>
<tr>
<td>Developing additional services regarding digital collections (in addition to searching and browsing)</td>
<td>77.5%</td>
<td>76.5%</td>
<td>28.7%</td>
</tr>
<tr>
<td>Negotiating with the company, if digitization tasks are performed outside the library</td>
<td>80%</td>
<td>73.5%</td>
<td>24.5%</td>
</tr>
</tbody>
</table>
## Developing and managing library collections: Institutional Repository

<table>
<thead>
<tr>
<th>Task</th>
<th>Do not perform this task at all</th>
<th>Do not have competencies</th>
<th>Have the possibility of acquiring competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creation and development of repositories</td>
<td>78.5%</td>
<td>76%</td>
<td>25.6%</td>
</tr>
<tr>
<td>Management/maintenance/input control/corrections in self-archiving</td>
<td>79%</td>
<td>77.5%</td>
<td>25.8%</td>
</tr>
<tr>
<td>(records were entered by the authors)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inserting records in the repository</td>
<td>80%</td>
<td>75%</td>
<td>22.6%</td>
</tr>
<tr>
<td>Management of copyright and related rights</td>
<td>74%</td>
<td>69%</td>
<td>31.8%</td>
</tr>
</tbody>
</table>

Gabriel, D. M.; Pleško, J.; 32nd EBLIDA Annual Council and Conference, Lisbon, 2024
Developing and managing library collections: Institutional Repository

<table>
<thead>
<tr>
<th>Task</th>
<th>Do not perform this task at all</th>
<th>Do not have competencies</th>
<th>Have the possibility of acquiring competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing rules and policies for the management and use of repositories (users, content, preservation, storage, rights and licenses, access)</td>
<td>78%</td>
<td>72%</td>
<td>24,3%</td>
</tr>
<tr>
<td>Management of repositories for research data</td>
<td>83,5%</td>
<td>78%</td>
<td>29,5%</td>
</tr>
</tbody>
</table>
## Information services

<table>
<thead>
<tr>
<th>Service</th>
<th>Do not perform this task at all</th>
<th>Do not have competencies</th>
<th>Have the possibility of acquiring competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>teaching users information literacy</td>
<td>26.5%</td>
<td>28%</td>
<td>53.57%</td>
</tr>
<tr>
<td>teaching users through blogs and social networks</td>
<td>54%</td>
<td>46.5%</td>
<td>41.9%</td>
</tr>
<tr>
<td>searching bibliographic and other databases for user needs</td>
<td>8%</td>
<td>12%</td>
<td>31%</td>
</tr>
</tbody>
</table>

Gabriel, D. M.; Pleško, J.; 32nd EBLIDA Annual Council and Conference, Lisbon, 2024
Application/Use of information technologies

- Library websites
  - Developing of the library website
  - Maintenance of the library website

- Development of databases, catalogs, and search engines
  - Maintenance and administration of databases
  - Implementation of metadata schemas into databases

- Computer equipment
  - Selection and acquisition of computer equipment for library and user needs
  - Maintenance of computer equipment
  - Installation and maintenance of computer software
<table>
<thead>
<tr>
<th>Task</th>
<th>Not Performing</th>
<th>Not Having</th>
<th>Possibility of Acquiring Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing library websites</td>
<td>65%</td>
<td>65.5%</td>
<td>29%</td>
</tr>
<tr>
<td>Maintenance of the library website</td>
<td>48%</td>
<td>49%</td>
<td>17%</td>
</tr>
<tr>
<td>Application/use of information technologies</td>
<td>35%</td>
<td>49%</td>
<td>34%</td>
</tr>
<tr>
<td>Maintenance and administration of databases</td>
<td>74%</td>
<td>44%</td>
<td>22%</td>
</tr>
<tr>
<td>Implementation of metadata schemas into databases</td>
<td>80%</td>
<td>76%</td>
<td>19%</td>
</tr>
</tbody>
</table>

Gabriel, D. M.; Pleško, J.; 32nd EBLIDA Annual Council and Conference, Lisbon, 2024
<table>
<thead>
<tr>
<th>Activity</th>
<th>do not perform this task at all</th>
<th>do not have competencies</th>
<th>have the possibility of acquiring competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selection and acquisition of computer equipment for library and user needs</td>
<td>55.5%</td>
<td>61%</td>
<td>24.6%</td>
</tr>
<tr>
<td>Maintenance of computer equipment</td>
<td>66%</td>
<td>71%</td>
<td>19%</td>
</tr>
<tr>
<td>Installation and maintenance of computer software</td>
<td>67%</td>
<td>67%</td>
<td>20%</td>
</tr>
</tbody>
</table>
• Management of metadata, persistent identifiers (ISBN, ISSN, DOI, etc.), UDC, etc. (do not perform this task at all 47.5%)
• Tasks related to the inclusion of publications in indexing publications and/or bibliographic databases (do not perform this task at all 80%)
• Publishing type of work/tasks (do not perform this task at all 48.5%)
If you conduct courses and workshops, please briefly specify the subject/topic and the target audience (e.g., searching online databases for scientists):

• Information Technology for Seniors

• Occasionally, I create guides for database searches and instructions for creating seminar, professional, or thesis papers. I lead a reading group.

• Creative workshops for children and adults, 3D pen drawing workshops for children and adults, art workshops, etc.

• Database search for high school students and pupils, course on using the e-građani (e-citizen) system for retirees.
If you conduct courses and workshops, please briefly specify the subject/topic and the target audience (e.g., searching online databases for scientists):

• Media literacy, database and catalog search for high school students and adult users.

• Programming Basics: users aged 7-18 - Micro:bit, AQ:bit

• Use of video conferencing tools

• Basics of computer usage for seniors

• Searching databases (online) for teachers, high school and elementary school teachers, students; search depends on user needs.
According to your opinion, what strengthens your competencies the most?

- Available online courses and lectures (70%)
- Independent use of various web resources (90%)
- Reading professional literature (90%)
- Collaboration on projects (81.6%)

Gabriel, D. M.; Pleško, J.; 32nd EBLIDA Annual Council and Conference, Lisbon, 2024
Future steps

1. Embrace Digital Transformation: invest in advanced technologies and modernize

2. Promote Digital Literacy: training and workshops for library staff

3. Enhance Data Privacy and Security: safeguarding privacy

4. Collaborate with Tech Partners: technology companies and academic institutions