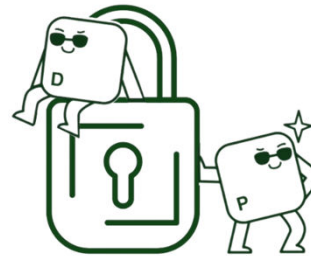# DATAPRO CURRICULUM

DATA PROTECTION BETWEEN INDIVIDUAL AGENCY, SURVEILLANCE AND MAKING MONEY

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DataPro – Hybrid Concept Workshop
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OVERVIEW

- Background to DataPro Curriculum approach
  - previous projects
  - other approaches

- Structure and principles of DataPro Curriculum
  - Target group(s)
  - Topical

- Discussion

IDEA BEHIND THE DATAPRO

- Information Society / Data Economy
  We have only seen the tip of the iceberg yet!

  - The growth of information, immaterial work, communication networks ... makes the world more complex.
  - Information (e.g. rules) is also a way to reduce/organise complexity.
  - What are the rules for you to take part?

  - Data has become a major asset - often as a by-product of general human agency.
  - Who owns it?

BACKGROUND - OTHER APPROACHES

- EU - DigComp

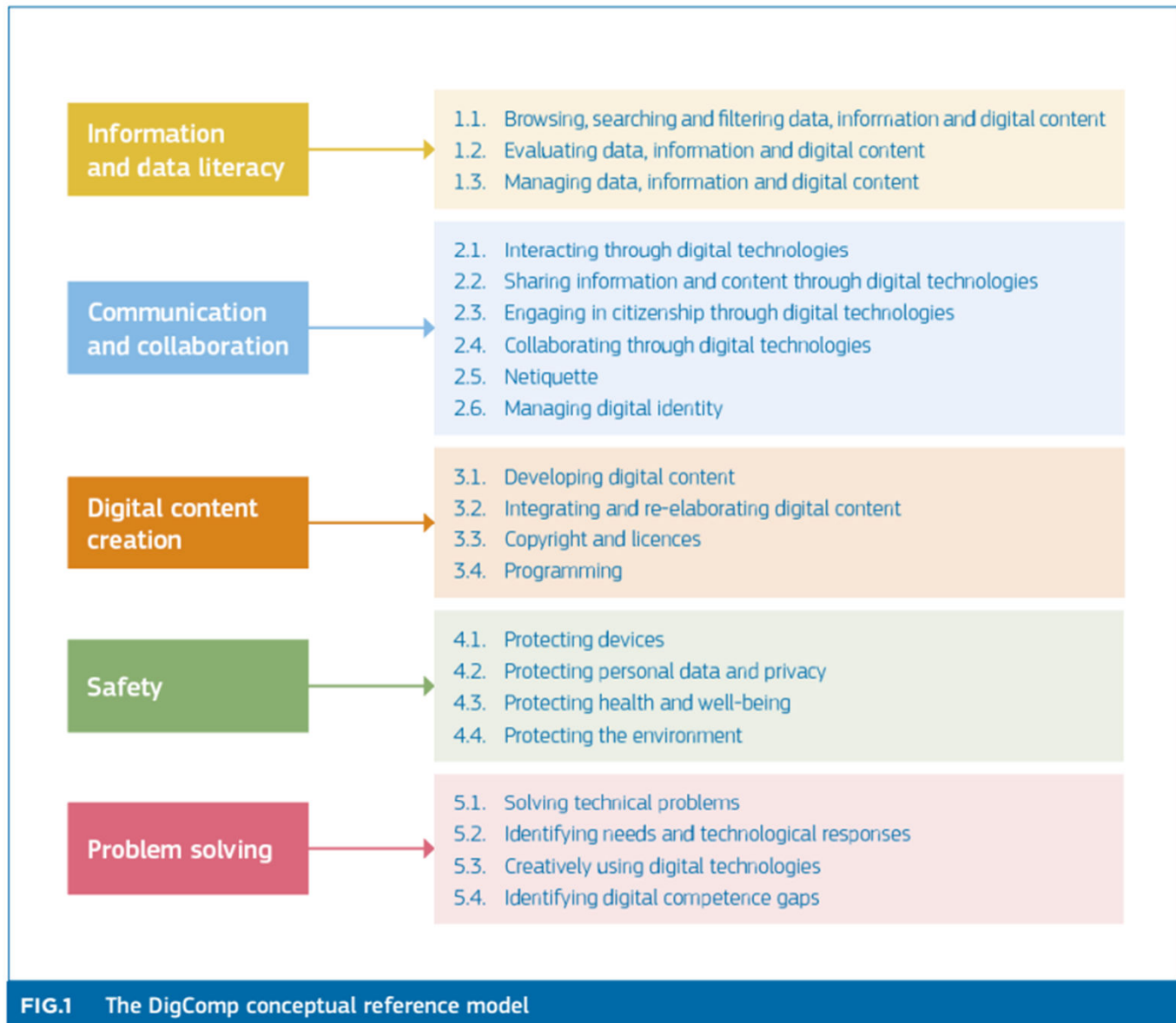- EU - DigCompEdu

- Unesco – Digital Kids – Asia Pacific

- Geiger – Curriculum (Horizon 2020)
  - Revisited in MECyS – Micro-Entreprise CyberSecurity (erasmus+)

DIGCOMP 2.2

- 5 Competence Areas
  - different amounts of 'Competences'

- 8 Proficiency Levels
  - 'basic' to 'advanced specialiced'

FIG.1   The DigComp conceptual reference model

Information and data literacy
1.1. Browsing, searching and filtering data, information and digital content
1.2. Evaluating data, information and digital content
1.3. Managing data, information and digital content

Communication and collaboration
2.1. Interacting through digital technologies
2.2. Sharing information and content through digital technologies
2.3. Engaging in citizenship through digital technologies
2.4. Collaborating through digital technologies
2.5. Netiquette
2.6. Managing digital identity

Digital content creation
3.1. Developing digital content
3.2. Integrating and re-elaborating digital content
3.3. Copyright and licences
3.4. Programming

Safety
4.1. Protecting devices
4.2. Protecting personal data and privacy
4.3. Protecting health and well-being
4.4. Protecting the environment

Problem solving
5.1. Solving technical problems
5.2. Identifying needs and technological responses
5.3. Creatively using digital technologies
5.4. Identifying digital competence gaps

DIGCOMP 2.2

1. INFORMATION AND DATA LITERACY

1.1 BROWSING, SEARCHING AND FILTERING DATA, INFORMATION AND DIGITAL CONTENT

To articulate information needs, to search for data, information and content in digital environments, to access them and to navigate between them. To create and update personal search strategies.

DIMENSION 3 • PROFICIENCY LEVEL

Level		Description	Statements
FOUNDATION	1	At basic level and with guidance, I can:	• **identify** my information needs, find data, information and content through a **simple** search in digital environments, • **find** how to access these data, information and content and navigate between them, • **identify simple** personal search strategies.
FOUNDATION	2	At basic level and with autonomy and appropriate guidance where needed, I can:	• **identify** my information needs, • **find** data, information and content through a **simple** search in digital environments, • **find** how to access these data, information and content and navigate between them. • **identify simple** personal search strategies.
INTERMEDIATE	3	On my own and solving straightforward problems, I can:	• **explain** my information needs, • **perform well-defined and routine** searches to find data, information and content in digital environments, • **explain** how to access them and navigate between them, • **explain well-defined and routine** personal search strategies.
INTERMEDIATE	4	Independently, according to my own needs, and solving well-defined and non-routine problems, I can:	• **illustrate** information needs, • **organise** the searches of data, information and content in digital environments, • **describe** how to access these data, information and content, and navigate between them, • **organise** personal search strategies.
ADVANCED	5	As well as guiding others, I can:	• **respond** to information needs, • **apply** searches to obtain data, information and content in digital environments, • **show** how to access these data, information and content and navigate between them. • **propose** personal search strategies.
ADVANCED	6	At advanced level, according to my own needs and those of others, and in complex contexts, I can:	• **assess** information needs, • **adapt** my searching strategy to find the **most appropriate** data, information and content in digital environments, • **explain** how to access these **most appropriate** data, information and content and navigate among them, • **vary** personal search strategies.
HIGHLY SPECIALISED	7	At highly specialised level, I can:	• **create solutions to complex problems with limited definition** that are related to browsing, searching and filtering of data, information and digital content, • **integrate** my knowledge **to contribute to professional practice and knowledge and guide others** in browsing, searching and filtering data, information and digital content.
HIGHLY SPECIALISED	8	At the most advanced and specialised level, I can:	• **create solutions to solve complex problems with many interacting factors** that are related to browsing, searching and filtering data, information and digital content. • **propose new** ideas and processes to the field.

D I G C O M P 2 . 2

1. INFORMATION AND DATA LITERACY

1.1 BROWSING, SEARCHING AND FILTERING DATA, INFORMATION AND DIGITAL CONTENT

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DIMENSION 3 • **PROFICIENCY LEVEL**

FOUNDATION	**1** At basic level and with guidance, I can:	• **identify** my information needs, find data, information and content through a **simple** search in digital environments, • **find** how to access these data, information and content and navigate between them, • **identify simple** personal search strategies.
	2 At basic level and with autonomy and appropriate guidance where needed, I can:	• **identify** my information needs, • **find** data, information and content through a **simple** search in digital environments, • **find** how to access these data, information and content and navigate between them. • **identify simple** personal search strategies.

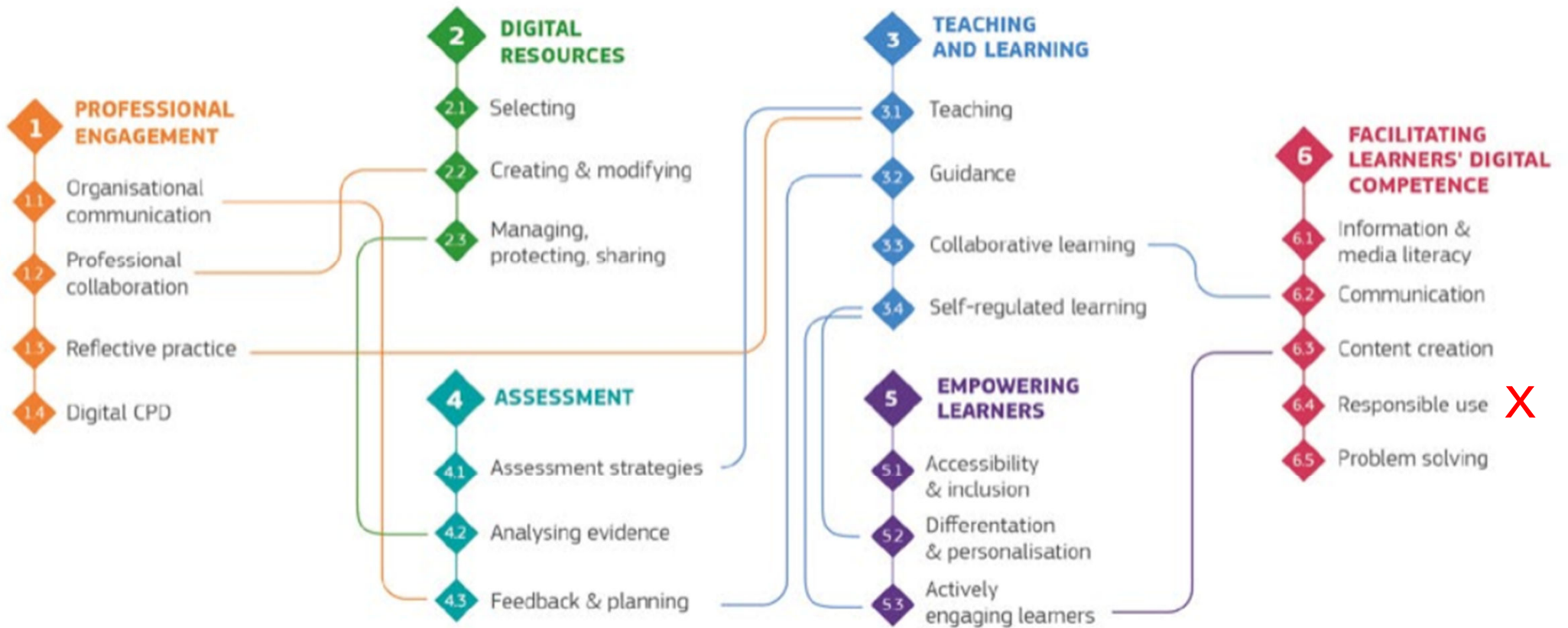### DIMENSION 4 • **EXAMPLES OF KNOWLEDGE, SKILLS AND ATTITUDES**

DIMENSION 5 • **USE CASES**

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Educators' professional competences

Educators' pedagogic competences

Learners' competences

1 PROFESSIONAL ENGAGEMENT
- 1.1 Organisational communication
- 1.2 Professional collaboration
- 1.3 Reflective practice
- 1.4 Digital CPD

2 DIGITAL RESOURCES
- 2.1 Selecting
- 2.2 Creating & modifying
- 2.3 Managing, protecting, sharing

3 TEACHING AND LEARNING
- 3.1 Teaching
- 3.2 Guidance
- 3.3 Collaborative learning
- 3.4 Self-regulated learning

4 ASSESSMENT
- 4.1 Assessment strategies
- 4.2 Analysing evidence
- 4.3 Feedback & planning

5 EMPOWERING LEARNERS
- 5.1 Accessibility & inclusion
- 5.2 Differentiation & personalisation
- 5.3 Actively engaging learners

6 FACILITATING LEARNERS' DIGITAL COMPETENCE
- 6.1 Information & media literacy
- 6.2 Communication
- 6.3 Content creation
- 6.4 Responsible use   X
- 6.5 Problem solving

DIGCOMPEDU

- 6.4 Responsible use
  - To take measures to ensure **learners' physical, psychological and social wellbeing** while using digital technologies. To empower learners to manage risks and use digital technologies **safely and responsibly**

- "**To enable learners**:
  - To **protect devices** and digital content, and to understand risks and threats in digital environments.
  - To understand safety and security measures.
  - To **protect personal data** and privacy in digital environments.
  - To understand how to use and share personal information while being able **to protect oneself and others** from damages.
  - To understand that digital services use a "Privacy policy" on how personal data is used "

UNESCO-DIGITAL KIDS-ASIA PACIFIC

Table 15: Answers to question B17: "How will you react when you find that your personal information is misused, compromised or acquired without permission online?"

	Bangladesh	Fiji	Korea	Viet Nam	Total
① Change password	80.8	77.7	75.8	71.5	76.4
② Review privacy settings and choose a more secure password	75.1	52.8	64.9	85.2	68.3
③ Use a report button	24.0	23.9	55.9	50.6	40.5
④ Disable or delete the account and make a new account	38.6	60.8	43.8	33.2	44.6
⑤ Ask parents/caregivers to help	32.7	28.9	13.7	14.8	21.5
⑥ Ask teachers to help	17.8	15.5	4.3	5.7	10.1
⑦ Report the issue to the police and show them what happened	11.9	28.8	30.2	24.3	24.9
⑧ Don't know what to do	5.8	5.0	3.2	1.6	3.8

UNESCO-DIGITAL KIDS ASIA PACIFIC

- Domain 2: Digital Safety and Resilience … refers to the ability of children to **protect themselves and others** from harm in the digital space

  - 2.1 Understanding **Child Rights**: The ability to understand legal rights and obligations within the global and local context.

  - 2.2 Personal Data, Privacy and Reputation: The ability to **understand how to use and share personally identifiable information** while being able to protect oneself and others from harm. Be able to implement strategies for **information and device security ..**.

  - 2.3 Promoting and **Protecting Health and Well-Being**: The ability to identify and manage health risks, and use digital technology in order to protect and improve the physical and psychological well-being of oneself and others.

  - 2.4 **Digital Resilience**: The ability to be preventative, reactive and transformative, allowing young people to avoid or cope with the risky situations they face, and improve themselves.

GEIGER - CURRICULUM

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- Cybersecurity and Data Protection clearly overlap for IT-lay persons in MSEs.

Level	Target group (within MSEs)	Learning content
1	IT-lay persons	• General basic Cybersecurity + basic Data Protection
2	IT-lay persons	• General cybersecurity for MSEs + general Data Protection (+ GEIGER specifics)
3	(Lay) IT-interested or experienced persons	• General cybersecurity for MSEs + general Data Protection • Implementation of cybersecurity measures in the own and/or other MSEs (with support of the GEIGER toolbox and further GEIGER services)

GEIGER - CURRICULUM


Data Privacy – Level I – Basic (partly ‚pre-business')	
acknowledged	responsibility of companies for the personal data they process
acknowledged	risks for companies not complying with the 'General Data Protection Regulation' (lawfulness)
experienced	exemplary consequences of non-compliance
identified	**categories of data (personal data, special categories)**
acknowlegded	the core principles of data minimization, lawfulness,… (Art. 5 GDPR)
identified	**reasons for lawful processing of personal data (Art. 6 GDPR)**
acknowlegded	**the rights of individuals**

HOW TO PROTECT YOUR PERSONAL DATA AND THAT OF YOUR FRIENDS?

- Data Protection is placed between **individual agency, surveillance and making money.**
  Thus the curriculum focuses on three interrelated topics. and how young people understand these:

  - personal data usage/protection,
  - data protection as field of human rights,
  - the complex value(s) of data.
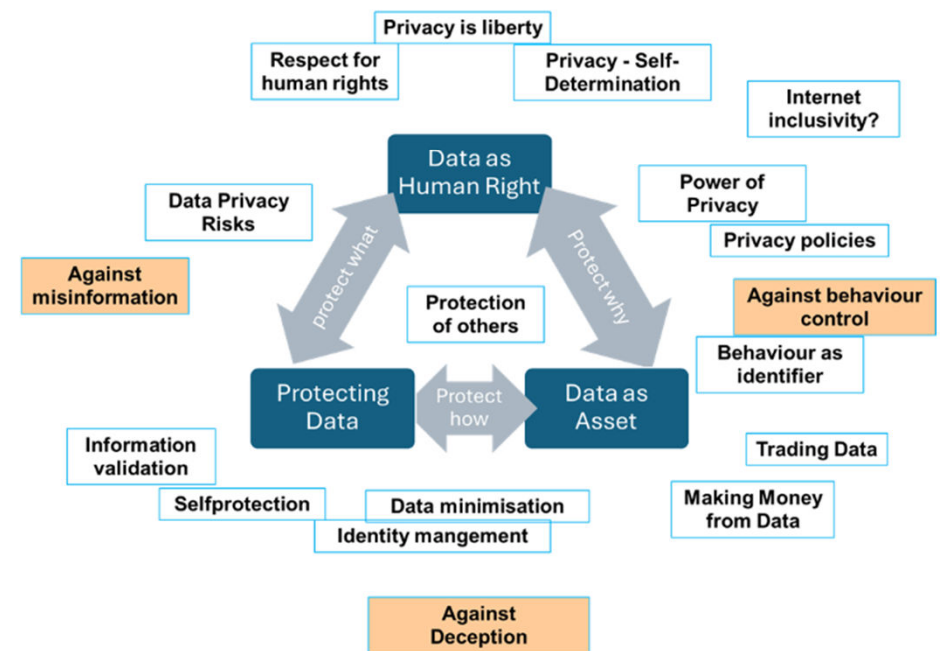
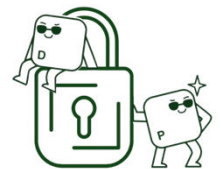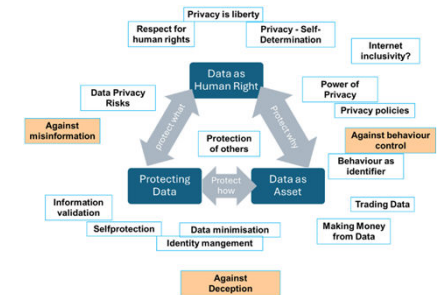# STRUCTURE AND PRINCIPLES

- Target group(s)

    - Secondary students (mainly SEC 1, i.e. no specialization)

    - Teachers, teacher trainees, teacher trainers

    - Further educational stakeholders

- As a general competence for competent, sovereign, resilient, healthy … acting with personal data there is only **one level** in the curriculum - fundamental for an information society / data economy.

STRUCTURE AND PRINCIPLES

- 'Protecting Data'
  refers to the **practicalities** of data protection and cyber security as understood in many guidelines.

- 'Data as Human Right'
  from a general education perspective – refers to the significance of **informational self-determination** as part of a modern human rights catalogue.

- 'Data as Asset'
  takes an economical stance, to explain how the **data industry** works and how individuals can benefit from the value of their data.

STRUCTURE AND PRINCIPLES

A. How to protect my private data (and my trust in information)?

- A.1 Identity Management
- A.2 Selfprotection
- A.3 Against Misinformation
- A.4 Information Validation
- A.5 Protection of Others
- A.6 Data Minimisation
- A.7 Against Deception

B. What makes data protection a human right?

- B.1 Privacy is Liberty
- B.2 Privacy - Self-Determination
- B.3 Power of Privacy
- B.4 Respect for Human Rights
- B.5 Data Privacy Risks
- B.6 Internet Inclusivity
- B.7 Privacy Policies:

C. What makes data valuable (economically)?

- C.1 Making Money from Data:
- C.2 Behaviour as Identifier
- C.3 Against Behaviour Control
- C.4 Trading Data:

EXEMPLARY LEARNING OBJECTIVES

A.2 Selfprotection:

a) Communication Controls: Know and use **measures to stop receiving unwanted messages or emails**, such as spam filters and email rules.

b) Tracking Management: Implement **measures to limit and manage the tracking** of your activities on the internet, including the use of browser extensions that block trackers and cookies.

c) Security Measures: …

EXEMPLARY LEARNING OBJECTIVES

B.5 Data Privacy Risks:

a) Risk Levels: Understand that there are **varying levels of privacy risk** associated with different data practices. Some data processes, particularly those involving AI, carry higher risks.

b) AI Risks: Be aware that **AI-based processes and services** can pose different levels of risk to privacy, often due to their ability to process large amounts of data and infer sensitive information.

EXEMPLARY LEARNING OBJECTIVES

C.1 Making Money from Data:

a) Revenue Models: *Learn* about the main ways companies make **money from personal and aggregated data**, such as through advertising platforms and improving targeted advertising (including political ads).

b) Service Economics: Recognise that most **free internet services** are provided by profit-oriented companies, which often monetise user data to generate revenue.

NEXT STEPS – WORK IN PROGRESS

- Development of syllabi / lesson plans
- Teacher training – further discussion
- School piloting

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https://www.linkedin.com/company/102192657