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DigiGo - Apprenticeships in the digital era

Module 3 – Facilitating Learners' Digital Competences

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Introduction

The purpose of this module is to **acquaint company trainers and mentors with the Digital Competences they need to instil in learners**. They will be provided with **examples** on how to achieve that goal and prompted to create **learning activities, assignments, or assessments** to put their knowledge into practice. This will not only help develop learners' digital competences, but also the trainers' along with them.

Apart from being able to select the resources they need, educators should also have the ability to **modify and build on existing openly licensed digital resources** (where this is permitted) as week as create or co-create new ones, while always considering the context of their use. Such resources can be either free software or tools that can be used to create brand new resources for educational purposes, or the OER (Open Educational Resources), which include tools that can be modified and built upon.

To conclude, educators need to be aware of **how to responsibly manage, protect and share these resources**.

They also need to be able to effectively **protect sensitive content and data**, something that can be achieved through simple actions of backing up content, using strong passwords, using anti-virus etc. Lastly, when using open resources, they need to be mindful of the licenses that apply and abide by those rules.

Information and media literacy

The global landscape is now shaped by a knowledge-based and innovation-driven economy, in which information and communication technologies are dominant (Seng & Choo, 2008). As educational professions face rapidly changing demands, educators need to develop their digital skills to help students become digitally competent (Redecker, 2017). This has to be done in a safe and responsible way (check: https://www.education.govt.nz/school/digital-technology/digital-technology-guide-for-schools/digital-technology-safe-and-responsible-use-in-schools/new-cd-page-2/safe-and-responsible-use-of-digital-technology-for-learning/). An important first step is to correctly articulate, find and manage information.

First, let us define what data is. According to "The Free Dictionary", data is: "a sequence of one or more symbols given meaning by specific act(s) of interpretation. Data can be analysed or used to gain knowledge or make decisions. Digital data is represented using the binary number system of ones (1) and zeros (0) as opposed to its analogue representation".

Now that we have a definition of the data, what skills are needed to be able to find, organize and process it? Critical thinking. According to the University of Waterloo, "Critical thinking can be defined

as the ability to examine a problem by consciously breaking it down and evaluating it, while providing arguments / evidence to support the evaluation." One useful method to approach data can be the Problem Based Learning (PBL) (more information about it can be found on: https://www.thetechedvocate.org/7-must-problem-based-learning-apps-tools-resources/).

 If you want to know more about critical thinking, check it out: https://uwaterloo.ca/centre-for-teaching-excellence/teaching-resources/teaching-tips/developing-assignments/cross-discipline-skills/promoting-assessing-critical-thinking.

Which digital environments can be used to find, organize, process, analyse and interpret data?

There are many web-based resources where authoritative information can be found. Some of them are updated continuously (for example, the temperature databases at the National Weather Service), several times a day (for example, New York Times) or daily (for example, Newsweek, Time). Some web resources undergo cyclical or event-based changes, such as the NASA website during the phases of a shuttle flight.

You can find information using the following freely accessible web search engines that index full text or academic literature metadata across a wide range of publishing formats and disciplines

- Google Scholar
- Elsevier
- JStor

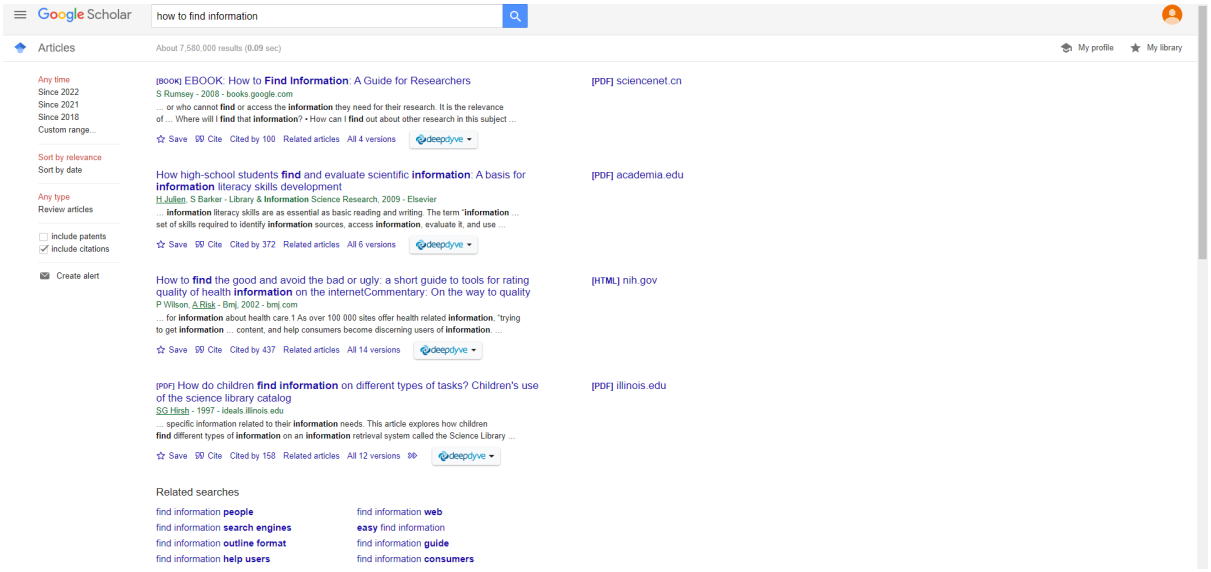
Real-life example: Someone does research about a specific topic of a European project and then gathers all the information to evaluate them with the project manager.

Google Scholar

We all use Google for our daily internet searches, so why should we switch to Google Scholar?

There are several useful differences from a regular Google search, such as:

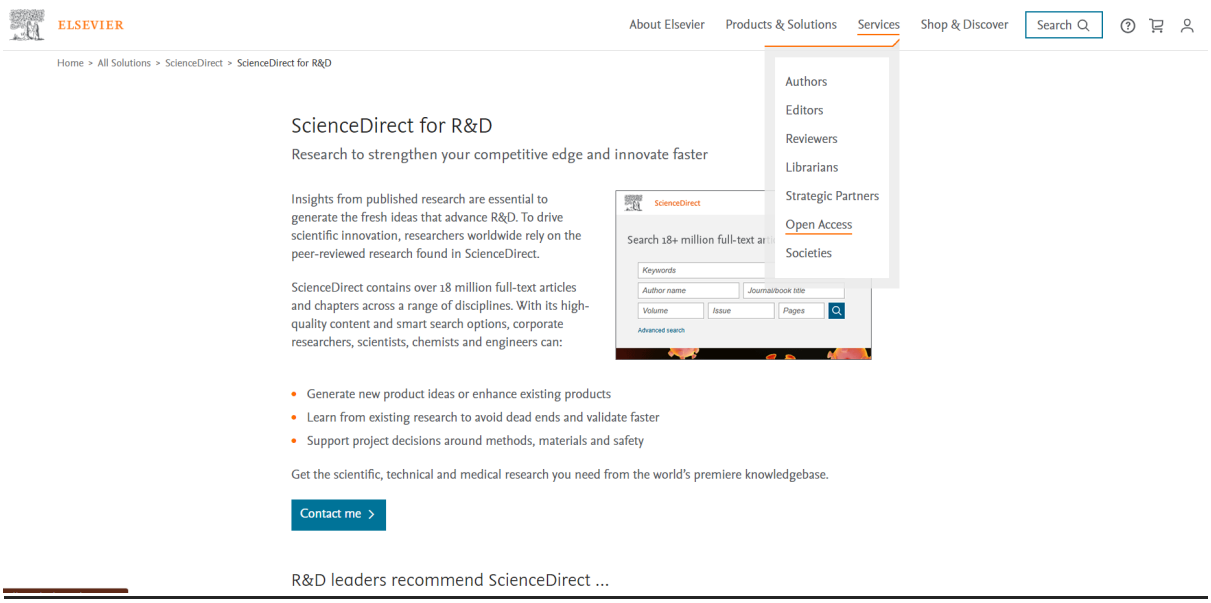
- the option to copy a formatted citation in different styles including APA
- export bibliographic data (BibTeX, RIS) to use with reference management software
- links that let you explore which other works have cited the listed work
- links that let you easily find full text versions of the article



Please note: While Google Scholar search is free, most of the content is not available for free. Check if the company you work for has an account that allows you to read restricted access content.

Elsevier

Elsevier is another option for finding and gathering information. It is an academic publishing company specializing in scientific, technical, and medical content. Subjects are health, life sciences, physical sciences and engineering, social sciences, and humanities. Access the **Open Access** section, to be able to read the publications with free and open online access.



 To know more about Open Access, read this: https://www.openaccess.nl/en/what-is-open-access.

JStor

Another digital library where you can find information is JSTOR. There you can find newspaper articles, books, images, and primary sources (immediate and first-hand reports on a topic from people who have had a direct connection with it).

Evaluating sources

Once we know where to find information through digital tools, how do we know if a source is credible? How can it be evaluated?

When we describe a source as credible, we are saying it is high quality and reliable, so we can believe what the source tells us. It is important to rely on high quality sources, because then you will contribute to produce credible results.

 Tips for evaluating the credibility of an information source verify: 1) the author's competence 2) the author's point of view 3) the publication date.

To evaluate the author's competence, check the author's qualifications (an advanced degree or other extensive experience in the field you are interested in). A credible source often provides information on the author's credentials.

To evaluate the author's point of view and avoid bias (imprecise representation of a fact), check if the research is funded by someone (such as a company / private group that could influence the research). If, using the digital libraries listed above, you find a peer-reviewed journal article, the likelihood that the information is accurate is high, as the review process helps filter sources written by unqualified authors.

Regarding the importance of checking the publication date, some sources may be out of date. Some sources are updated to reflect the changed reality more faithfully (as for instance the on the Cornell University Library website).

 Activity: Evaluate a news Story, download the pdf document here: https://guides.library.cornell.edu/ld.php?content_id=43510566

Be sure to check if there is any bias, whether the research is funded by a third party, the author's background and qualification and whether it has been peer-reviewed.

Activity: Students are often required to synthetize the results of their research in reports, but not individual works. Although, the ability to summarize an author's position itself is important to understand its validity and truthfulness.

"When a student cannot piece together an author's argument, it might be that the author's work does not have a coherent argument. Thus, resource assignments should include a requirement to summarize the arguments of the works used."

(Helping Students Develop Digital Content Curation Skills | Faculty Focus)

Extra resources

UNESCO. Media and Information Literate Citizens: Think Critically, Click Wisely!

UNESCO. What does UNESCO do to Promote Media and Information Literacy

Louisa Flores. Importance of Media and Information Literacy.

Digital communication and collaboration

Digital competence is also expressed in professional interactions (communication and collaboration) with colleagues, students, and other interested parties, for individual professional development and for the collective good and continuous innovation (Redecker, 2017). National and transnational communication and collaboration is now dependent on technology (ASIA company).

But what it is digital communication? Digital collaboration is the practice of people working together through online means such as software-as-a-solution (SaaS) platforms (Glasscubes, 2020). Teams can rely on digital tools to meet many of their collaborative needs.

There are many tools and systems available that promote collaboration, as explained in Module 4 of this guide. Keep in mind, however, that not all solutions will be suitable.

Your digital collaboration tool should allow for easy sharing of files with people inside and outside the organization.

Real-life example: Someone is tasked to do a specific job and communicates with the team through a text-based platform, such as Microsoft Teams, to ask for further instructions.

TIP: If the solution has **automatic version checking**, so your team does not have to wonder if they're working with the latest version, that's a bonus.

TIP: **Drive collaboration and communication through one common platform**. Using a single tool, such as Microsoft 365 – where you have Word, Excel, PowerPoint, and Outlook - (see Module 4), it is possible to **bring together the various communication and collaboration tools** without having to navigate through multiple tools.

Extra resources

University of Derby. Explaining digital communication, collaboration, and participation

Brian Siwert. Digital Communication and Collaboration

Education- Emily. Digital Communication & Collaboration

Digital content creation

 First of all, it has to be said that digital content creation is an umbrella term for a range of many different activities.

Generally speaking, digital content creation is the process of generating appealing ideas for a specific audience category, and then creating written or visual content around the topic chosen. The contents created should be as accessible and understandable as possible for a wide network of audience, through a blog, videos, infographics, or any other formats.

As free as this process is, there are a few steps to follow:

1. Research topic for content.

   As illustrated in the previous chapters of the module, this first step is extremely important. The person who wants to create the content firstly need to search for the material and choose the most adequate and reliable sources

2. The actual creation processes.

 Besides videos and blogs, nowadays social media is widely used, and one of the most popular one is Instagram. Alongside the many social media pages and accounts, digital production agencies and figures like content creation experts emerged.

For instance, if you want to have some tips on how to create effective and inclusive contents or about videography, check Home | Talk to May (@talktomay on Facebook and Instagram).

Real-life example: Someone makes a presentation (ex. Canva) for the dissemination of a specific project to other stakeholders.

 Activity: “How can you be strategic about implementing social media into your course? Whether it’s just one assignment or the entire course, Debbie Fetter offers insight on how she created a strategic social media plan to implement in her own course. Fetter explains how social media can help teach students how to craft a direct message to a specific audience, and how these tools can be used for future employment. Additionally, she often adds polling and trivia via Instagram for low-stakes grades, extra credit, or small prizes.” Want to deep this innovative idea? Listen to episode 20 of the faculty focus live podcast Live with Debbie Fetter: Implementing social media and Virtual Study Halls at Faculty Focus Live Podcast | Faculty Focus

Content creation activity: try to use Canva and realize a presentation of your apprenticeship. (See Module 4 on how to use Canva)

FROM: Helping Students Develop Digital Content Curation Skills | Faculty Focus

Copyright

Please note that the information available online is protected by copyright to protect the economic interests of the authors. To avoid exploiting the work of others, it is important that all the information you use is correctly referenced. Some materials protected by copyright, are granted a license (more about it here: https://licensinginternational.org/education/what-is-licensing/).

In this regard is of absolute importance to understand how to reference in the correct way the material we are citing. The references (also called bibliography) are a significant part of any work, both in educational domains or others.

Check out this introduction to referencing: https://www.uwe.ac.uk/study/study-support/study-skills/referencing/introduction-to-referencing

Extra resources

BSD Education. Creating Digital Content for Education

Viddyoze. How To Become A Successful Digital Content Creator

Deakin Library. Creating Quality Digital Content

Responsible use

The Digital Technology: Safe and responsible use in schools guide provides educators and school workers with the information and rules to follow to use digital technologies safely and responsibly. As explained in the guide's introduction education is changing: digital technologies are affecting students' learning process. These surely have many benefits but are also accompanied by challenges and risks for students and schools, and it is important to understand how to manage them.

What is important for an educational environment is to spread knowledge about the positive role of digital technology and its correct use, and for this reason concepts of online safety and privacy should be included in curriculum planning.

Real-life example: Putting a safe and clever password in company accounts, to protect the personal data contained in the files. Visit trustworthy sites for research purposes.

Extra resources

Mary Mae Batangoso. Responsible Use of Technological Tools

FWISD EDtech. Digital Responsibility Safe and Responsible Use of Technology

Smile and Learn - English. Responsible Use of Technology for Kids - First Mobile - Cyberbullying - Fake News - Online Privacy

Digital problem solving

Digital problem solving is related to basic digital skills, meaning that it involves the use of digital skills, strategies, and approaches to reach everyday life goals, both personally and professionally speaking.

To learn more about it, read "Defining Digital Problem Solving" by Jill Castek, Gloria Jacobs et al. (pdx.edu). In this paper the authors describe how this definition has been developed and its application in educational domains.

Real-life example: Using different kinds of digital technology tools to improve remote working conditions and the overall working environment (during/after the Covid-19 pandemic).

"As our ways of working are rapidly changing, how can we continue to problem solve in a virtual environment while still achieving human-centred outcomes?" Remote tools to optimize

collaborative problem solving in a virtual environment - GHD here can be found some examples of practical activities that can be implemented for problem solving matters using digital means.

Extra resources

Friday Institute. Problem Solving in the Digital Age MOOC-Ed

TEDx Talks. A Digital Approach to Innovation and Problem Solving | Roshen Maghhan | TEDxUoSM

Excellence Gateway. Digital problem-solving skills

Evaluation

Multiple choice questions

1) A search engine that shows a wide range of credible academic information is:

- Google Scholar (t)
- Yahoo! (f)
- Bing (f)

2) Which tool can someone use to create digital content?

- Skype (f)
- Elsevier (f)
- Canva (t)

3) Digital Communication tools are mainly used to:

- Share files (f)
- Communicate with other individuals (t)
- Generate ideas for digital content (f)

Extra exercise

Search and gather information on a specific topic using one or more of the search engines listed in this module. Use a digital tool to communicate with a team of individuals to evaluate the information gathered. Use a content creation digital tool to make a presentation using the final file. Don't forget to list all the credible (safe) sites you used to gather information.

Q: Did you find the activity difficult? If yes, why?

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