



SKILLS FOR SUCCESS

Digital Skills Toolkit

March 2023



Skills for Success Digital Skills Toolkit

Authors

Krista Medhurst
Lucy Altrows
Alisa Foreman

Design

Taryn Kromm

Bow Valley College
345 6th Avenue SE
Calgary, Alberta T2G 4V1

About Bow Valley College

Bow Valley College is a public post-secondary institution located in Calgary Alberta. Our vision is to open doors and open minds by creating opportunities for learners, employees, employers, and communities, and by shaping the future of college education.

Acknowledgment

Funding for the Establishing a Common Framework for Digital Skills in Canada research project was generously provided by the Government of Canada's Skills for Success program.

The authors would like to extend their gratitude to the industry stakeholders representing several key sectors who generously gave their time and expertise to help us create this Digital Skills Toolkit. Their valuable contributions through informational interviews provided us with critical insights about digital skills in the workplace. Their input played a significant role in shaping the content of this Toolkit and ensuring its relevance to the current digital landscape. We truly appreciate their support and collaboration and are grateful for the opportunity to learn from their experiences and knowledge. We thank all the interview participants for their contributions and for being an essential part of this project's success.

© 2023 Bow Valley College



This Creative Commons license allows reusers to copy and distribute the material in any medium or format in unadapted form only, for noncommercial purposes only, and only so long as attribution is given to the creator.

Table of Contents.

Introduction	4
Objectives & Purpose	5
Quick Guide	5
Scope	5
Toolkit Limitations	5
SFS Overview	6
A Closer Look at Digital	7
Categorizing Digital Skills	7
Digital Categories	7
Devices & Digital Foundations	8
Applications & Tools	9
Information & Data	10
Collaboration	11
Safe Practices	12
Learning	13
A Note on Proficiency Levels	13
Ideas for Using this Toolkit	14
Additional Resources	14
References	15

Introduction.

Digital technologies are transforming how we work, learn, and live. The influences of technological innovation and advancement are being felt globally, particularly in highly industrialized countries like Canada. Virtually every aspect of Canadian life has been affected by what has been called, the Fourth Industrial Revolution (World Economic Forum, 2020).

Much research has been done regarding the skills workers need not only to participate but to excel in today's labour market. As workplaces have modernized and digitized, employers are seeking workers with a robust and sophisticated set of skills. Basic digital skills are now universally required. Along with this, technologies such as artificial intelligence, robotics, process automation, virtual reality, and the Internet of Things (IoT) have created demand for a package of 21st-century skills that include advanced levels of digital, cognitive, and social and emotional skills (UNESCO, 2022).

To ensure all Canadians can fully engage and benefit from societal digital transformation, the government and other stakeholders must promote a labour force that is highly skilled and efficient with digital acquisition. A shared understanding of digital skills is essential for this work. Currently, in Canada, "there is a pressing need for a modernized skills framework that is responsive to a changing world and provides consistent language and a common understanding of skills constructs" (Palameta, et al., 2021). If Canada is to remain an economic, educational, and social leader on the world stage, establishing new skills frameworks for digital skills is vital.

Skills for Success is a principal labour force initiative launched by the Government of Canada to affect program and policy transformation aligned with the evolving needs of the workforce. Digital – an expanded and modernized area of the Skills for Success framework – describes the skills required to thrive in an era of rapid technological advancements and digital adoption in all realms of life (Palameta, et al., 2021).

Research and development initiatives are underway to enhance the availability of tools and resources to support the implementation of Skills for Success. Included in this research is the Establishing a Common Framework for Digital Skills in Canada project led by Bow Valley College. The research expands on the Digital definition and skill components presented in the *Research Report to Support the Launch of Skills for Success: Structure, Evidence, and Recommendations* (Palameta et al., 2021) with the aim of understanding digital skills usage in the context of work. Research findings have informed the development of this toolkit, which illustrates how digital skills are applied in the Canadian labour market.

Objectives & Purpose

The Digital Skills Toolkit aims to support and enhance the implementation of digital skills initiatives related to workforce development, training, and assessment. It will provide employers, educators, and other stakeholders with a provisional framework to begin identifying digital competencies associated with specific occupations and industries. It is hoped this information will foster skills development and spur further exploration of digital skills in the context of the Canadian labour market. Ultimately, the Toolkit strives to help individuals view digital skills as an essential element to full and meaningful participation in work and life.

Scope

The Toolkit offers a snapshot of digital skills that are used in the workplace. It is not an exhaustive list – it emphasizes skills that are widespread and transferable across many occupations. Advanced and specialized skills, tools, and technologies are not included. Also, the Toolkit does not reference the complexity a general definition of entry, intermediate, and advanced digital skills. A complexity framework is expected to be developed as part of national projects to advance Skills for Success.

Toolkit Limitations

It's important to recognize that this toolkit reflects the current digital skills landscape. While many components will likely remain relevant, it's anticipated that regular updates will be necessary to keep this guide in line with swiftly evolving technologies and their usage demands in the workplace.

Quick Guide:

Section 1: Overview of Skills for Success and Digital

Pages: 6 - 7

Here you will find information on the Skills for Success framework, along with a closer look at Digital.

Section 2: Skills Tables & Examples

Pages: 8 - 13

This section contains skill tables that detail specific digital skills. It also provides examples of how these skills are used.

Section 3: Application

Page: 14

The final part of this document provides ideas for using the Toolkit and links to a few resources for improving digital skills.

SFS Overview.

The Skills for Success framework reflects the everyday skills Canadians need for work, learning, and life. The modernized framework expands on the Essential Skills framework that was utilized in Canada for over two decades. It encompasses the full spectrum of skills that are central for participation in the labour market and society, including literacy skills, technical skills, and social-emotional skills. Furthermore, it reflects the needs of the current and future labour market and supports Canadians that need to improve their foundational and transferable skills (ESDC, May 18, 2021).

Several overarching criteria apply to Skills for Success (Palameta et al., 2021, p. 8). The framework is:

- Work-focused and transferable. The skills are applicable to most occupations and apply to both work and life contexts.
- Durable and enduring. The skills are responsive to emerging labour market needs and technological advancements.
- Assessable. The skills are measurable and demonstratable through various assessment formats.
- Teachable/learnable. The skills align with learning objectives in employment training contexts, facilitating the development of training materials and progression in skills development.
- Broadly recognized. The skills are reflective of Canadian and international skills frameworks for adults.
- Flexible and inclusive. The skills are inclusive and reflective of the diversity of lived experiences.



A Closer Look at Digital.

The Skills for Success framework defines Digital as the **ability to use digital technology and tools to find, manage, create, and share information and content**. Digital is an umbrella term describing an expansive set of competencies associated with the use of digital technology in a dynamic world. Moreover, the word “skill” encompasses the knowledge, abilities, technical skills, and attitudes needed to perform specific workplace tasks or functions.

Categorizing Digital Skills

In this toolkit, digital skills are categorized into six groups under the umbrella of Digital. These categories provide an organizing structure for skills that share common characteristics. The six categories align closely with how digital skills are conceptualized in the Research Report to Support the Launch of Skills for Success: Structure, Evidence, and Recommendations.

Digital Categories:



Devices & Digital Foundations

Operate digital devices including computers, tablets, phones, and other handheld devices and technology. Apply foundational digital knowledge to identify the goals & purpose of digital tasks, use the basic functions common to most digital devices, and understand basic terminology.



Digital Tools

Utilize digital tools such as software, applications, Artificial Intelligence (AI), etc. Select and use digital tools aligned with the goals and purposes of tasks. Understand how to keep tools updated and enhance accessibility for self and others.



Information & Data

Navigate, search, evaluate, and organize digital content and data. Find information using digital searches and analyze the relevance and reliability of the information. Store and organize digital content logically and efficiently.



Collaboration

Use tools and platforms to communicate, collaborate, and share information. Share information online through forms, online transactions, applications, etc.



Safe Practices

Apply safe and responsible practices in digital environments.



Learning

update and upgrade digital skills and knowledge. Build on existing digital skills to advance digital competence and engage in training, professional development, and personal growth.



Devices & Digital Foundations

Devices & Digital Foundations describes the primary knowledge and digital literacy needed to operate digital devices and understand how they are used in various contexts. These skills form the basis for completing digital tasks and underpin other components of the Digital framework.

1.1 Identify the Goals and Purpose of Digital Tasks	1.2 Identify and Use the Basic Functions Common to Most Devices	1.3 Know the Basic Terminology Common to Most Digital Devices
Recognize the common purposes of using digital technology (i.e., to communicate, access information, etc.).	Access and login to digital devices (power on, restart, lock, create usernames and passwords, login, etc.).	Know the basic terminology for command functions common to most digital devices.
Considers the benefits and challenges of digital technology use.	Navigate and interact with a device’s interface and content.	Distinguish between hardware and software.
Appreciate that technology improves efficiency and productivity.	Connect to a network (wireless, local area, virtual private, etc.).	Recognize basic digital symbols and icons.
Perceive how technology aids in problem-solving.	Apply basic settings, adjust preferences, and utilize accessibility tools.	Understand the differences between public, private, and personal information.
Comprehend the importance of digital access.	Access the internet through a web browser and conduct basic searches.	Grasp basic concepts of privacy, safety, and security in digital environments.
Identify information needs and where to access content and data.	Select relevant applications and software to complete tasks (i.e., select an email application to communicate).	Realize what a digital identity is.
Recognize the physical impacts of digital technology use (i.e., eye strain, back pain, etc.) and take steps to prevent them.	Identify and solve basic technical problems (i.e., restart a device).	Understand that artificial intelligence is being used in many areas of our lives.
	Keep devices up to date.	

Examples:

- Install an app on a mobile device.
- Complete software updates in response to push notifications.
- Complete keyword searches to find information online.
- Review terms of use to identify hidden fees or in-app purchases.
- Use voice to text to send a text message.
- Create separate email accounts for personal and work use.
- Pair a Bluetooth speaker or headphones with a mobile device.
- Operate digital devices when it is safe to do so.
- Take frequent breaks to limit the strain of digital device usage.
- Change the font settings on a document to improve readability.
- Keep login and password information private and secure.



Digital Tools

Digital Tools defines the skills needed to complete digital tasks using software, applications, AI, and other digital tools. This involves understanding the purpose and goals of a task and selecting the tools and applications that will best achieve the intended outcomes. It also requires keeping tools updated and enhancing accessibility for self and others.

2.1 Use Software, Mobile Applications, and Other Digital Tools for a Purpose	2.2 Select Appropriate Digital Tools Based on Goals and Purpose of Tasks	2.3 Keep Digital Tools Up to Date
Create, format, and edit documents including text, tables, graphics, and charts.	Differentiate between the purpose and intended use of different software and applications.	Run updates to hardware and software improve performance and enhance security.
Download, upload, and share digital content.	Select appropriate software and applications that will effectively achieve the intended outcome of a task.	Backup and archive information and content using cloud or local storage.
Enter, manipulate, and analyze data in spreadsheets.	Compare features and functions of different digital tools to select an appropriate digital solution.	Setup authentication for applications and software.
Edit and enhance images and graphics.	Use assistive technology to enhance access to devices and software.	Uninstall applications and software from digital devices.
Present information using digital presentation tools (i.e., PowerPoint).		Permanently delete digital content.
Troubleshoot technical problems.		
Enter, search, and extract data from databases.		

Examples:

- Track project expenditures in a spreadsheet and generate totals for different cost categories.
- Find, update, and create information in digital drawings and schematics.
- Investigate digital solutions to solve problems or improve efficiency at work.
- Extract and analyze business information, such as sales, inventory, and client information from a database.
- Schedule, plan, and track meetings and tasks using a digital calendar and task list.
- Plan a delivery route using GPS software or maps.
- Deliver a presentation at a meeting using PowerPoint.
- Use remotely controlled devices (i.e., drones) to survey, collect measurements, obtain images, or assess hazards.
- Monitor equipment, operate machinery, or gather field information using a mobile phone.
- Process client information, orders, and payments using point-of-sale devices, hotel management systems, or QR codes.
- Perform inventory controls using logistics software.
- Enter and retrieve data from electronic payroll systems.
- Create and format MS Word documents using advanced formatting functions.
- Update system and accounts passwords routinely as needed.
- Use AI tools to edit and refine a report.



Information & Data

Information & Data depicts the skills required to navigate, search, evaluate, and organize digital content, information, and data. This includes finding and using digital searches and analyzing information for relevance and reliability. It also involves storing and organizing digital content logically and efficiently.

3.1 Navigate Digital Content	3.2 Carry out Digital Searches to Find Information and Content	3.3 Evaluate the Relevance and Reliability of Digital Information	3.4 Store and Organize Digital Information
Navigate online content using hyperlinks, menus, and other navigation elements.	Select keywords and key phrases to search for digital content.	Understand the criteria used to evaluate the reliability and relevance of digital content.	Organize, store, and retrieve files using folders and menus.
Recognize the common layout and format features of websites.	Understand how online search results are presented and ranked.	Assess information sources to distinguish between credible and non-credible information.	Apply naming conventions to documents and files.
Create bookmarks and shortcuts to efficiently retrieve information.	Apply advanced search features to refine and filter results.	Make use of URL details to determine sources of online information (i.e., .org, .com).	Download, upload, and archive digital files.
	Utilize search tools to locate information quickly (i.e., search in PDF document).	Understand how copyright applies to the use of digital content.	Distinguish between file types/formats and file extensions.

Examples:

- Download open-source images for a presentation and use appropriate attribution.
- Evaluate information from online searches to determine if it has been influenced by commercial or government interests.
- Recognize the intent behind online content (i.e., inform, entertain, persuade, sell).
- Evaluate the reliability of information generated by AI by using other sources.
- Identify characteristics of fake news or misinformation.
- Copy and move files, images, and documents between folders, devices, and cloud storage.
- Create a nested folder structure to organize digital files.
- Utilize advanced settings to auto archive and file digital content.
- Comprehend possible legal implications for downloading or sharing digital content such as music or films.
- Recover content or files from a backup.
- Evaluate a website to ensure personal data is secure (i.e., https, safety logo or certificate).
- Detect whether media like images, video, or audio has been created or altered using AI or other applications.
- Assess information to determine if it is current, relevant, and accurate, and cross-reference information from multiple sources to ensure its quality.
- Effectively search for and locate specific information from websites or online documents.
- Transfer and log information obtained from one source into another (i.e., the product number of a part needing replacement into a company database/online ordering system).
- Track online reviews to determine the most useful and appropriate product needed.
- Use AI to translate text or summarize documents or meeting notes.



Collaboration

Collaboration outlines the skills necessary to communicate, collaborate, and share information in digital environments. It includes using digital communication tools and platforms ethically and responsibly and transacting online.

4.1 Use Communication Tools and Social Media Platforms	4.2 Use Information-Sharing Platforms	4.3 Transact Online	4.4 Apply Ethical Practices Online
Communicate using emails and other messaging apps.	Use online meeting tools (i.e., Zoom, MS Teams) to meet, share information, and collaborate.	Complete online forms such as applications or reports.	Protect the digital identity and personal information of self and others online.
Employ appropriate style, tone, and writing conventions associated with communication platforms.	Share documents and files using online sharing platforms (i.e., Google Drive).	Create accounts and subscribe to online services (i.e., icloud, government accounts, etc.).	Recognize the potential impacts on others when posting comments or images.
Choose appropriate communication platforms for specific audiences and purposes.	Set permissions and give access to shared documents.	Use online financial services and purchasing platforms.	Report concerns and inappropriate online behaviour using appropriate channels.
Understand difference between public and private messages.		Interact with online support services (i.e., virtual assistant, chatbot).	Appreciate the psychological risks to mental health and wellness associated with online activities.

Examples:

- Share information and updates with colleagues using email.
- Set up email signatures, out of office notifications, and other settings in email.
- Send quick, informal messages to a supervisor to notify them of a change in work schedule.
- Moderate an online meeting (recording, screen sharing, etc.) using video conferencing platforms (e.g., Teams, Zoom).
- Communicate rules and expectations regarding work boundaries, such as deadlines, task priorities, weekend availability, and other related parameters.
- Alter the sharing preferences for social media content to specify the intended audience (i.e., friends only).
- Order office supplies using an online purchasing platform.
- Create a professional profile and network in a digital format (i.e., LinkedIn).
- Understand what website cookies and cookie preferences are.
- Use cloud-based platforms and tools to create and collaborate on shared documents and communicate with colleagues (e.g., Teams, Google Suite).
- Use project management tools like Jira to enter progress reports and communicate updates to team members.
- Send bug reports and ITS requests.
- Create and apply boundaries around the usage of digital devices to avoid burnout (e.g., turning off notifications, setting emails to autoreply out of office).
- Identify and report types of behaviours that constitute online harassment or bullying (e.g., repeat messaging, inappropriate content).



Safe Practices

Safe Practices references the skills required to protect information, devices, and networks from threats. It involves recognizing the sources of threats in digital environments and taking preventative action to manage risks to self and others.

5.1 Understand safe practices for data storage and sharing	5.2 Protect personal information and privacy for yourself and others	5.3 Protect data and devices from online risks and threats	5.4 Make secure online transactions
Comply with organizational policies for security, remote access, and data storage.	Understand personal rights and options for the collection and use of personal data.	Create secure usernames and passwords.	Manage traceable online activities and take steps to safeguard identity.
Keep software and systems up to date to minimize security risks.	Recognize that personal information must be securely stored.	Keep passwords confidential and secure.	Access online services securely (i.e., multifactor authentication).
Shield against information loss by backing up data.	Adjust privacy and other settings on devices and applications to ensure personal information is protected.	Differentiate the common types of viruses and understand how to recognize them.	Understand the security risks associated with public Wi-Fi.
Prevent access to sensitive and confidential information.	Know where consent is required to collect and use personal information.	Identify and avoid cyber threats (i.e., phishing emails, password attacks).	Locate secure websites by looking for padlock and https in address bar.

Examples:

- Review data-sharing policies for applications to determine how personal data will be used.
- Browse incognito or clear browsing history to maintain privacy and confidentiality, especially if using a shared device or network.
- Distinguish between sponsored and unsponsored content.
- Ask permission before sharing photos or other personal information about others.
- Distinguish what types of personal data should not be shared online.
- Use a virtual private network to protect data and content while working remotely.
- Know the different forms of security breaches.
- Recognize and proactively implement measures to safeguard against common cyber threats and scams.
- Report phishing emails and other cyber threats to Information Technology Services.
- Assess potential privacy concerns when screen sharing.



Learning

Learning characterizes the skills necessary to update and upgrade digital skills and knowledge. It involves building on existing digital skills to advance digital competence and engage in training, professional development, and personal growth.

6.1

Use existing skills and knowledge to learn and apply new advanced digital skills

Access online tutorials and forums to solve problems and improve digital skills.

Choose appropriate online learning resources to maintain digital skills.

Adjust and customize digital environments to reflect personal needs.

Recognize where improvements to digital skills are required.

Support others to acquire digital skills.

Examples:

- Use virtual reality to learn how to operate specialized equipment.
- Sign up for industry newsletters.
- Complete cyber security training.
- Use online resources to learn a new skill (e.g., YouTube, LinkedIn, blogs).
- Troubleshoot technical problems.
- Access targeted tutorials on how to use specific functions or features of software.
- Complete certifications online.
- Complete onboarding using digital tools and platforms.
- Engage in continuous learning/lifelong learning.
- Recognize that digital skills need to be continuously updated.
- Track professional learning through digital documentation (e.g., online portfolios).
- Engage in online safety training.
- Assess the credibility of information presented in online learning (i.e., is an authority on the subject).
- Utilize health apps to research conditions and treatments.

A Note on Proficiency Levels

The new Skills for Success model established provisional proficiency descriptors to define the complexity of skill use within the framework. The Research Report to Support the Launch of Skills for Success (Palameta et al., 2021, p. 47) includes three provisional Digital proficiency levels:

Entry: Individuals use the basic functions of familiar digital devices. They require guidance to find and evaluate the relevance and reliability of online information, and to engage in safe online practices.

Intermediate: Individuals use a wider range of functions of familiar and unfamiliar digital devices, including customizing devices for specific purposes. They find and use relevant and reliable online information and engage in safe practices.

Advanced: Individuals have in-depth knowledge of digital device operations and information technology systems. They can find and use relevant and reliable online information to improve digital processes, including enhancing their online safety. They can assess future digital needs and keep their digital skills up to date.

Ideas for Using this Toolkit.

Digital skills are imperative to thrive and grow in a dynamic and unpredictable labour market. They extend far beyond the technical know-how needed to operate devices and applications. Digital Skills encompass literacy, problem-solving, creativity, innovation, adaptability, and resilience. Improving digital skills entails finding ways to motivate and change mindsets toward continuous learning. To keep pace with change, digital skills learning must foster an attitude of curiosity and a willingness to take risks and experiment through uncertainty.

The information in this toolkit is best used alongside supplemental resources and emerging practices for workforce development. For example, in a training context, digital skills learning should be contextualized to authentic job tasks and performance measures. It should address all skills, knowledge, attitudes, and behaviours essential to employment success in the digital realm.

Various stakeholder groups can utilize the toolkit for different purposes. Some examples of these groups and their potential uses of the toolkit are:

Educators & Practitioners

- Understanding areas of focus for training
- Creating authentic learning tasks
- Developing learning outcomes
- Establishing performance criteria
- Building rubrics and assessments
- Measuring learning impact
- Recognizing Prior Learning
- Identifying areas for professional development/growth

Employers

- Identifying skill requirements for specific occupations
- Assessing candidate skills relative to job requirements
- Establishing clear expectations to guide job performance
- Addressing skills gaps
- Upskilling employees in response to change
- Planning for succession and professional development

Policy Makers and Industry Stakeholders

- Building industry-specific profiles of digital skills requirements
- Identifying transferable skills for labour mobility
- Informing the development of policy and programming
- Developing system-wide approaches to critical skills development
- Contributing to credentialing initiatives
- Considering and implementing future research

Additional Resources.

English Resources:

Google For Education: Free online video-based lessons for practical applied digital skills.
<https://applieddigitalskills.withgoogle.com/en/learn>

Microsoft: Free online video-based lessons on working with computers & working and collaborating online
<https://www.microsoft.com/en-us/digital-literacy>

Alberta Workforce Essential Skills (AWES): Free online self-paced interactive modules on basic computer and digital skills. Module one focuses on using and maintaining devices while module two explores online safety and communication.

<https://awes.ca/digital-skills-course-module-1-pilot/>
<https://awes.ca/digital-skills-course-module-2/>

French Resources:

THalent digital: Online program that aims to develop digital skills for persons with disabilities.
<https://www.monparcourshandicap.gouv.fr/actualite/thalent-digital-un-parcours-de-formation-gratuit-vers-les-metiers-du-numerique>

English & French Resources:

Khan Academy: Free online video-based lessons on computing and digital skills
(English) <https://www.khanacademy.org/computing>
(French) <https://fr.khanacademy.org/>

Pix : Free online platform used to assess and develop digital skills.
<https://pix.org/en-gb/>

References.

- Australian Government. (2020). Digital literacy skills framework. Department of Education, Skills and Employment. <https://www.dewr.gov.au/foundation-skills-your-future-program/resources/digital-literacy-skills-framework>
- Burton, P. (n.d.). The importance of digital skills in the modern workplace. SkillsYouNeed. <https://www.skillsyouneed.com/rhubarb/digital-skills-modern-workplace.html>
- Employment and Social Development Canada. (2021, May 18). The new Skills for Success Model. <https://www.canada.ca/en/services/jobs/training/initiatives/skills-success/new-model.html>
- Government of Canada. (2021, May 19). Skills for Success. Government of Canada. <https://www.canada.ca/en/services/jobs/training/initiatives/skills-success.html>
- Gyarmati, D., Lane, J., Murray, S. (2020). Competency Frameworks and Canada's Essential Skills. <https://ppforum.ca/publications/skills-next-competency-frameworks-and-canadas-essential-skills/#:~:text=A%20competency%20framework%20is%20a,ranking%20of%20candidates%20in%20recruitment.>
- OECD. (2016, December). Skills for a digital world. <https://www.oecd.org/els/emp/Skills-for-a-Digital-World.pdf>
- Palameta, B., Nguyen, C., Lee, W., Que, H., Gyarmati, D. (2021). Research report to support the launch of Skills for Success: Structure, evidence, and recommendations: Final report. Social Research and Demonstration Corporation. <https://www.srdc.org/media/553148/sfs-srdc-final-report-en.pdf>
- UK Government. (2018). Essential digital skills framework. Department of Education. <https://www.gov.uk/government/publications/essential-digital-skills-framework>
- UK Government. (2020). National Standards for essential digital skills. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/909932/National_standards_for_essential_digital_skills.pdf
- UNESCO-UNEVOC. (n.d.). Digital competence frameworks for teachers, learners and Citizens. Digital Frameworks. <https://unevoc.unesco.org/home/Digital+Competence+Frameworks>
- Vuorikari, R., Kluzer, S. and Punie, Y. (2022). DigComp 2.2: The digital competence framework for citizens - With new examples of knowledge, skills and attitudes (EUR 31006 EN). Publications Office of the European Union. <https://publications.jrc.ec.europa.eu/repository/handle/JRC128415>
- Zaidi, D. (2022, October 8). Canada's critical "skills gap" problem explained in 6 charts. CTV News. <https://www.ctvnews.ca/business/canada-s-critical-skills-gap-problem-explained-in-6-charts-1.6100855>