LIFELONG DIGITAL LEARNING: "COMPUTER LITERACY," "DIGITAL LITERACY," AND "DIGITAL COMPETENCE" AS DIMENSIONS FOR DIGITAL SKILLS

Maíra Rocha Santos 1
Marília Miranda Forte Gomes 2

ABSTRACT

Objective: The aim of the study was to explore the concepts of "Computer Literacy," "Digital Literacy," and "Digital Competence" to outline three dimensions for digital skills, complementing the studies of Van Deursen and Van Dijk (2014).

Theoretical framework: The theoretical framework was based on the studies of Van Deursen and Van Dijk (2014) that already addressed the theme of digital skills, but the present study sought to deepen and complement these investigations, exploring in more depth the concepts of "Computer Literacy," "Digital Literacy," and "Digital Competence."

Methodology: The methodology included a search for articles in the Web of Science database, with a hundred citations or more that used the terms "Computer Literacy," "Digital Literacy," and "Digital Competence." From this search, Content Analysis was conducted with the technique of Descending Hierarchical Classification.

Results: The results led to the creation of a framework with the main mentions about each selected term, organizing and systematizing the dimensions for digital skills.

Conclusion: The research concluded that the three dimensions are interdependent, and a model that highlights their interconnections and overlaps can provide a clearer structure for the study of digital skills.

Research implications: The research has practical implications, as the developed framework simplifies and operationalizes the concepts of "Computer Literacy," "Digital Literacy," and "Digital Competence," making them easier to understand and apply. This can help educators and professionals develop more effective teaching and training programs to improve individuals' digital skills.

Originality/value: The originality and value of the research lie in the creation of a framework that systematizes and simplifies the concepts of digital skills, contributing to a better understanding and application of these concepts in the context of lifelong digital learning.

Keywords: Lifelong Digital Learning, Digital Skills, Framework, Digitalized Society.

APRENDIZAGEM DIGITAL AO longo da vida: "COMPUTER LITERACY," "DIGITAL LITERACY," E "DIGITAL COMPETENCE" COMO DIMENSÕES PARA HABILIDADES DIGITAIS

RESUMO

Objetivo: O objetivo do estudo foi explorar os conceitos de "Computer Literacy", "Digital Literacy" e "Digital Competence" para delinear três dimensões para as habilidades digitais, complementando os estudos de Van Deursen e Van Dijk (2014).

1 Universidade de Brasília, Brasília, Distrito Federal, Brazil. E-mail: mairarocha@unb.br
Orcid: https://orcid.org/0000-0002-9880-6082
2Universidade de Brasília, Brasília, Distrito Federal, Brazil. E-mail: mariliamfg@unb.br
Orcid: https://orcid.org/0000-0001-5849676
1 INTRODUCTION

Technological evolution and the digitalization of society have made learning and technology proficiency crucial for full integration into modern society. Alvin Toffler argues that illiteracy is no longer limited to reading and writing, but also to the ability to learn, unlearn, and relearn continuously throughout life, expanding the concept of education to encompass formal, non-formal, and informal learning in diverse environments. This relates to the idea of lifelong learning, which suggests that education should not be restricted to a specific period of life, but should be encouraged on an ongoing basis, including online courses, developing skills at work, and access to educational resources.

However, such continuous learning requires an adaptation in its definition to incorporate the technological component, since digital technology plays a central role in all aspects of life in contemporary society. Therefore, the most appropriate concept is "Digital Lifelong Learning", because success in today's society requires individuals to constantly adapt to the technological changes that influence and are influenced by all social spheres (UMAH et al, 2023).

To do so, it is critical that they develop digital skills, which include not only the ability to use computers and mobile devices, but also understanding the ethical, social and political implications of these digital technologies. Lifelong learning should therefore be intrinsically linked to the acquisition and enhancement of digital skills. Improving these skills is essential to promoting equal opportunities, as it allows everyone, regardless of their background, education, income, age or gender, to have access to information, jobs and chances more equitably. In their...
studies focusing on digital skills in the context of health, for example, Azzopardi-Muscat et al (2019), they observed that in the short term, digital technologies are likely to increase health inequalities associated with increasing age, lower level of schooling and socioeconomic status. On the other hand, they concluded that programs to improve digital health skills, as well as access monitoring in the various social groups, can also help ensure that digital technologies act to reduce, rather than reproduce or aggravate existing health inequalities (UMAH et al, 2023).

Alexander van Deursen and Jan van Dijk (2014) describe the set of skills as "Digital skills". The concept of digital skills refers to the ability to effectively use digital technology and its tools to perform tasks such as surfing the internet, communicating, solving problems or staying safe in online environments (DEURSEN, DIJK, 2014). So these skills can range from technical skills like using software and hardware to cognitive skills like evaluating information online, collaborating in digital environments, and maintaining digital security. Mastering them then becomes a necessity for daily life and a fundamental competence for full participation in the digitized society (WARSCHAUER, 2004). Teaching these skills benefits individuals and strengthens society as a whole, including and empowering its members (VAN DIJK, HACKER, 2003).

However, the clarity and uniformity in the definition of the terms that are part of this digital skill set are not always evident and, finally, the translations of these words from English into Portuguese, also contribute to this confusion. The ambiguity and context of using the terms, such as Information Literacy, Computer Skills, Media and Information Literacy, among many others is a challenge for research and practice (PARK et al, 2020). In this sense, the authors propose that the terms "Computer Literacy", "Digital Literacy" and "Digital Competence" be used consistently to describe different dimensions of digital abilities. This is a useful approach that will assist lifelong digital learning. This is because, when defining these concepts taking into account technological evolution from the past to the present, it is possible to simplify and guide the researches, establishing categories of skills instead of fixed concepts. This is particularly relevant due to the rapid obsolescence of these concepts as a result of constant technological evolution.

For there to be consistency in the proposal, it was necessary to investigate on the basis of scientific articles the definition used of the chosen terms and their application. The intention was to evaluate whether the theory qualifies the terms selected for this study as possible dimensions for digital abilities. So the question arises that guides this research: What are the convergences and divergences of the concepts "Computer Literacy," "Digital Literacy," and "Digital Competence" presented here as dimensions of Digital Skills? In this sense, the study explored the concepts of these three terms with the aim of outlining 3 dimensions for digital abilities, complementing the studies of Van Deursen and Van Dijk (2014).

From the search of these terms in the Web of Science database it was possible to separate the main articles and analyze the concepts found through Content Analysis with the Descending Hierarchical Classification technique (RATINAUD, 2014). Thus based on the literature review, the authors created a framework for each dimension of the proposed digital ability, simplifying and operationalizing these concepts.

2 THEORETICAL REFERENCE

2.1 Lifelong Digital Learning

The concept of "Digital Lifelong Learning" is a recent approach that emphasizes the need for continuous learning in a constantly evolving digital world (INDEX OF READINESS FOR DIGITAL LIFELONG LEARNING, 2023). Although the term has only 14 articles
cataloged in recognized academic sources as of September 2023, the broader concept of "Lifelong Learning" has roots going back to the 1970s, influencing educational policies and lifelong skills development around the world. However, due to technological advancement, the need arises to adapt the concept to include the digital element, as exemplified by the Digital Lifelong Learning Readiness Index (IRDLL), which transcends the boundaries between formal and informal learning, creating opportunities for continuous learning, essential to contemporary society.

Enhancing digital skills becomes crucial, as technology is shaping teaching and learning methods and creating demands for digital competence in all sectors (CHOVANOVA SUPEKOVA, 2023). Lifelong digital learning plays a key role in meeting this demand, enabling individuals to navigate the digital environment, understand emerging technologies and adapt to new digital contexts. This need to hone digital skills is amplified by the growing importance of digital transformation in social and institutional spaces, benefiting both groups and older people (SANTOS E GOMES, 2022) and companies seeking to compete and innovate in an increasingly digitalized business environment (MAGAZ-GONZÁLEZ ET AL., 2023).

### 2.2 Origin and Choice of Terms

Throughout the 1970s to the present, a variety of nomenclatures have appeared relating to the digital environment. Recently, Park et al (2020) mapped some of these words used to describe digital abilities, sometimes used as synonyms, sometimes interchangeably or even in a complementary way. The ambiguity of these terms hinders research and practice in digital education. This is because researchers don't have a common agreement on what it takes to develop digital skills, making them a complex, multifaceted phenomenon. Board 1 sets out the date of entry of the terms into the databases and, consequently, their milestone.

<table>
<thead>
<tr>
<th>Year</th>
<th>Term Used</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>Computer Skills</td>
<td>GATTIKER, 1992; BORGHANS et TER WEEL, 2004</td>
</tr>
<tr>
<td>1993</td>
<td>Technological Literacy</td>
<td>WAETJEN, 1993; LUKE, 1997</td>
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<tr>
<td>1994</td>
<td>Information Literacy</td>
<td>BEHRENS, 1994; RADER, 2002</td>
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<tr>
<td>2004</td>
<td>Media Literacy</td>
<td>LIVINGSTONE, 2004; POTTER, 2018</td>
</tr>
<tr>
<td>2002</td>
<td>Information Literacy</td>
<td>Rader (2002)</td>
</tr>
<tr>
<td>2005</td>
<td>Data Literacy</td>
<td>SHIELDS, 2005; FONTICHIARO, OEHRLI, 2016</td>
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<tr>
<td>2006</td>
<td>E-Literacy</td>
<td>KOPE, 2006</td>
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<tr>
<td>2006</td>
<td>Cyber Literacy</td>
<td>STILLER, LEBLANC, 2006</td>
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<tr>
<td>2016</td>
<td>Digital Citizenship</td>
<td>CHOI, 2016</td>
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<tr>
<td>2016</td>
<td>ICT Skills</td>
<td>FALCK, HEIMISCH, WIEDERHOLD, 2016</td>
</tr>
<tr>
<td>2018</td>
<td>Internet Literacy</td>
<td>HARRISON, 2018</td>
</tr>
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</table>
The term "Computer Literacy" was first coined in the 1970s by educators and researchers, including Seymour Papert, Cynthia Solomon and Richard Wexler of MIT, with the aim of empowering students to use computers, predicting their importance in the labor market (MOLNAR, 1979). Subsequently, the concept evolved to encompass a wide range of information technology-related skills, such as software use and understanding programming (IBRAHIM et al., 2023).

Digital Literacy, a later concept, emerged in the 1990s with the spread of the Internet and expanded the scope of digital skills needed to handle information and online communication. Authors such as Paul Gilster and Eshet (2002) further developed this idea, describing "Digital Literacy" as the ability to understand and produce different types of digital content, including images, videos, and the ability to evaluate and utilize information from digital sources. This term reflects the importance of digital literacy in an increasingly connected and technology-dependent world.

Bawden (2001), in his article, brings the idea of gathering knowledge to build a body of reliable information for the subject, information retrieval skills, as well as critical thinking to judge on the veracity of the content, reading and understanding of dynamic material, such as hypertexts, networks of people to help manage the information received and finally, publish and access the information. The International Panel on Literacy in Information and Communication Technologies, held in 2002, completes this concept by adding skills such as managing, integrating, creating and evaluating information for the Internet (PANEL, 2002).

Gunther Kress, in "Literacy in the New Media Age" (2003), advanced the concept of "Digital Literacy", noting that it is not limited to the ability to use digital technologies to read and write, but encompasses understanding and participation in new multimodal communication modes emerging in the digital era, including text, image, sound and video. For Kress, digital literacy is essential for full participation in contemporary society. In addition, Van Deursen and Van Dijk (2014) added that "Digital Literacy" encompasses the ability to evaluate online information as well as the ability to communicate and collaborate in digital environments. This approach requires a critical, interactive and collaborative understanding of digital information, which sets it apart from Computer Literacy.

Subsequently, the concept of "Digital Competence" was introduced in the 2000s to emphasize the importance of digital skills in full participation in the digital society. It covers a broader range of knowledge, skills and attitudes needed to effectively and appropriately utilize digital technologies. Includes the ability to achieve personal and professional goals using technology such as data analysis and teamwork in virtual environments. "Digital Competence" is seen as a broader concept covering "Digital Literacy" and has been widely discussed in academic literature, highlighting its importance for contemporary digital society (EUROPEAN COMMISSION, 2002; REDECKER E PUNIE, 2017; SPANTE et al., 2018).

Digital Competence is seen as a broader skill than Digital Literacy, which includes not only technical skills but also social, cultural and ethical skills. However, the terms "Digital Literacy" and "Digital Competence" are still used interchangeably, and there is a lack of consensus about their definition and scope (FALLOON, 2020).

The choice of these three terms to represent digital skills is based on a literature review on the topic. The terms "Computer Literacy", "Digital Literacy" and "Digital Competence" are often used in academic and professional literature to describe different levels of digital skills.

<table>
<thead>
<tr>
<th>Year</th>
<th>Skill</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>Coding Skills</td>
<td>TUOMI et al, 2018</td>
</tr>
<tr>
<td>2018</td>
<td>Digital Resilience</td>
<td>Reynolds e Parker, 2018</td>
</tr>
<tr>
<td>2022</td>
<td>Media and Information Literacy</td>
<td>HAIDER, SUNDIN, 2022</td>
</tr>
</tbody>
</table>

Source: Prepared by the Authors (2023).
"Computer literacy" refers to basic computer skills, such as using an electronic device, and performing basic operations such as pasting, moving, opening, and closing folders, browsing the internet, using applications, or programming. Knowledge and skills close to the operational. "Digital Literacy" refers to more complex digital skills such as using social media, creating online content, and solving problems using digital technologies. Advancing the operational scope and initially activating the subject's critical capability. Finally, "Digital Competence" is a broader term that includes social, cultural and ethical knowledge, skills and attitudes to use digital technologies effectively and appropriately for full participation in the digital society. This term is used to emphasize that digital skills involve attitudes and values such as security and privacy and ethics in the digital space (LINH et al, 2023).

3 METHODOLOGY

This study took an exploratory approach to analyzing the concepts of "Computer Literacy", "Digital Literacy" and "Digital Competence" from scientific papers. The analysis was performed using the downward hierarchical classification technique by Reinert's method, aided by the data analysis tool IRAMUTEQ and the content analysis by Bardin (2011) to assist in the classification and categorization of the findings.

To guarantee the quality of the selected articles, the research was conducted in the Web of Science (WoS) database, known for its rigor in the selection of high quality articles (MARIANO, ROCHA, 2017). The terms "Computer Literacy", "Digital Literacy", and "Digital Competence" were searched individually in the WoS search fields. Following the search, 1,578 articles were found with the term "Computer Literacy", 4,106 articles for "Digital Literacy" and 1,959 articles for the term "Digital Competence". Selection criteria were adopted that included only articles with more than 100 citations, in order to identify influential and well recognized works in the area. Thus, the final sample was composed of 44 articles related to the concept of "Digital Literacy", 22 articles related to the concept of "Computer Literacy" and 15 articles related to the concept of "Digital Competence". The articles were read in detail to extract the concept of each term in each article. The search was conducted on July 31, 2023. Figure 1 illustrates the sample selection.

The collected data was organized into a table to facilitate analysis. Three textual corpus were created, namely "Computer Literacy", "Digital Literacy" and "Digital Competence", each representing the concepts found in each term in the literature. The analysis was then conducted using the IRAMUTEQ software, which applied the Descending Hierarchical Classification (CHD). This is a statistical technique of analyzing multivariate data that is often used to identify patterns or structures in a data set. It is used to group objects or elements into clusters or classes based on their characteristics or similarities through the chi-square (χ²). The chi-square is a useful tool for determining whether there is a statistically significant association between two categorical variables or whether these variables are independent of each other. The chi-square test result gives a p-value, which indicates the probability that the observed differences are due

**Figure 1.** Percentages of HRC Classes
**Source:** Authors
to chance. If the p-value is less than a given level of significance chosen (usually 0.05), it can be concluded that there is a statistically significant association between the variables.

To achieve this result, IRAMUTEQ performs a segmentation of the textual corpus of analysis by means of statistical calculations, with the intention of reaching the text segments (STs), as discussed by Ratinaud (2014). Then the STs are categorized based on their vocabularies, and the set of them is distributed according to the frequency of the lematized forms (words already reduced to base form). This analysis aims to identify classes that share similar vocabulary among themselves, but differ from other classes, as explained by Camargo and Justo (2013). Figure 2 below illustrates the idea.

![Figure 2. Text Corpus, Text, and Text Segment](source: Adapted from Fernandes, 2016)

This methodology allowed an in-depth analysis of the concepts of "Computer Literacy", "Digital Literacy" and "Digital Competence" based on a sample of recognized scientific articles, providing valuable insights into these terms in the context of digital skills.

### 4 OUTCOME AND DISCUSSION

The first step was to look for the validity of the sample selected by the program. For Fernandes (2016) the samples are positive and valid for analysis starting from 70% use of the textual corpus analyzed. In the sample analyzed, 84 segments of text produced from 3 texts with a percentage of validation of 80.95% were observed. Once the sample has been validated, the textual corpus submitted for analysis by means of the Hierarchical Descending Classification (CHD) of the data generating Figure 3.

As can be seen in Figure 3 seven classes were generated and named. The term "Computer Literacy" is represented in its aspects, according to the sample collected, by classes, 5, 4 and 7. In a well delimited manner it is possible to see the conceptual characteristics about the interaction between man and machine reported in the initial theories, in class 5. During this period, they discussed the importance of man interacting with the computer, inserting the machine into its daily context, from education to the corporate environment. With 13.24% of representativeness, this class, in conceptual terms, is the least representing the context of "Computer Literacy", perhaps because of carrying the most historical concepts of the phenomenon. Class 4, however, exhibits the highest ratio found with a 17.65% agreement percentage of the overall sample. This article discusses navigability, retrieval and ICT skills in operating ICTs as the central concept when it comes to "Computer Literacy". The Class 7, in sequence, shows a result of 14.71% agreement and discusses the phenomenon from its technical abilities, strengthening the concept that the "Computer Literacy" dimension is represented by technical skills from turning on the computer, performing simple operations such as retrieving information in the equipment (copy, paste, access folders) until reaching similar navigability in the pages of the internet, managing to access and retrieve information such as images, texts, videos, photos, etc...

Following the results it is possible to see classes 1, 3, 2 and 6. In this block are contemplated the concepts of "Digital Literacy" and "Digital Competence". In the results, it is possible to confirm the criticisms documented in the literature that indicate that there are divergences as to the delimitation of these concepts, often used in an interchangeable manner or even by means of the appropriation of some determined characteristics.

In Class 1, named "Digital Literacy" - Social and Cultural Aspects is an example of this affirmative. With 11.76% agreement, the lowest overall percentage of the sample, this class contains the idea of the social and cultural aspects of digital literacy, bringing the importance of critically analyzing the recovered content, especially from the perspective of security and privacy. However, based on the authors’ studies, the understanding is that these characteristics are part of the concept of "Digital Competence", a concept that appeared in the 2000s and that proved to be more complete, including in the theoretical discussions researched. This fact can be confirmed in this sample, since all the classified content came from the textual corpus "Digital Literacy" but it did not prove very expressive (11.76% class 1) when compared to the other concepts of "Digital Literacy" classified (14.76% class 3 class 6).
Classes 3 and 6 presented the same percentage of agreement 14.71%, displaying a content of greater agreement among the authors analyzed. Class 3 presents the critical and ethical aspects in evaluating the information retrieved. Sharing, collaboration and content building for the information society are among the characteristics of this class. Class 6, on the other hand, presents the need to unite technical and cognitive aspects of the individual to use ICTs and extract their benefits in a targeted way. Solving problems, collaborating, sharing, constructing contents, etc. with fermentation, in an ethical way, and using basic knowledge (information retrieval, navigability and mastery of the tool) make up this construct. The concept, then, reflects the ability to act and think critically about phenomena in order to achieve benefits in different contexts, as advocated in the seminal studies on "Digital Literacy".

Finally, represented by class 2 with 13.24%, one has the concept of "Digital Competence" from the collected textual corpus. The result points to the need for "collective action" when it comes to technology. Learning, education, collective construction and the common social good are all features of this dimension.

Another important result for evaluating the content of the collected textual corpus and ratifying the data already displayed is the display of the words in the Cartesian plane, as shown in figure 4.

![Figure 4. Classes in Cartesian plane](image)

**Source:** Prepared by the authors in Iramuteq (2023).

In figure 4 it is possible to see how the classes approach, move apart or relate. As shown in quadrants 1 and 2, one can see the terms of the "Computer Literacy" concept, showing that the idea of information retrieval and navigability is to complement ideas about home-machine interaction and technical skills. Likewise, it is possible to see that there are two more complementary concepts of "Digital Literacy", namely classes 3 and 6, Ethics and Critical Ability and Technical and Cognitive Aspects, respectively.

The concept of ‘Digital Competence’ in Class 2 is closely related to the concept of ‘Digital Literacy’, showing interchangeable and poorly delimited employment between the terms. It is interesting to draw attention to the aspects of online security and privacy that, apart, show the difficulty of authors in categorizing these characteristics. The dynamics of technologies, in this sense, can be considered.
4.1 Proposal for Simplification of Concepts

Based on the results found, the authors therefore suggest a simplified model for the studies focusing on improving the digital abilities of the subjects. Conceptually it was noted that the definition of "Computer Literacy" is being employed with much agreement among the most cited authors. The dimensions "Digital Literacy" and "Digital Competence" appear a little more fluid in the literature and, from the results found and the seminal theory analyzed, it was possible to find these consonances and dissonances, as previously discussed. The other proposals therefore propose the following definitions for the proposed dimensions, as shown in Board 1 below:

**Board 1:** Framework for delimiting the concepts of the analyzed dimensions:

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Concept</th>
<th>Detailing</th>
<th>Practical examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Literacy</td>
<td>Ability of a computer/cell phone/tablet user to interact with systems and applications effectively and efficiently. This ability includes the knowledge and skills necessary to master the device/system/software, as well as navigate the internet, search for relevant resources, use communication applications and continually learn about new information and communication technologies (ICTs) .</td>
<td>Interact with systems and applications effectively and efficiently: Understand the user interface and perform tasks/commands correctly.</td>
<td>• Use the computer in a basic way, such as turning it on, off and navigating the operating system. • Use software applications such as a word processor, spreadsheet, and web browser. • Interact with communication systems, such as email, social networks and video conferencing platforms. • Use search tools to find relevant information. • A traveler using a travel website to plan a trip. • A student watching a tutorial video on how to use a new app.</td>
</tr>
<tr>
<td>Digital Literacy</td>
<td>Ability to use digital technologies ethically, responsibly and critically to access, evaluate, create and share information in different social contexts. It requires cognitive skills (thinking critically, solving problems and making decisions) and technical skills (using digital devices and software).</td>
<td>Ethics: respecting the rights of others and avoiding the dissemination of false or harmful information. Responsible: avoiding the abusive or harmful use of technologies. Criticism: evaluating the reliability of information and identifying possible biases. Environment: used in school, work and social environments.</td>
<td>• A student who uses the internet to research a topic for a school project. • A professional who uses presentation software to create a presentation.</td>
</tr>
</tbody>
</table>
Digital Competence | Share: collaboratively, contributing to the construction of knowledge.  
Reliability: reliable information, preventing the spread of false information.  
Collaborate: used to collaborate with others, sharing ideas and working together to solve problems.  
Problem: technologies to find creative solutions.  
Information: finding, evaluating and understanding information in order to make informed decisions.  
Communication: social participation, using technologies to communicate, learn and express oneself.  

Digital technologies: basic skills in using computers, mobile devices and applications.  
Active and conscious subject: individual who dominates the virtual space, contributing and taking responsibility for his or her actions as a citizen.  
Understanding and evaluating digital information: assessing the reliability and relevance of information, and identifying and avoiding false or misleading information.  
Digital content production: creating texts, images, videos and other types of digital content.  
Online communication and collaboration: using digital technologies to communicate with others, share ideas and collaborate on projects.  
Understand and respect online privacy and security: protect personal data and avoid online security risks.  

- A teacher using collaboration software to work with students on a project.  
- A student participating in an online discussion with other students.  
- A student creating a video to present an activity.  
- An individual using a firewall to protect their computer from cyber attacks.  
- A sales professional using a CRM to manage customer relationships.  
- An individual using a secure password to protect their online accounts.  
- A volunteer using a website to find volunteer opportunities.  

**Source:** Prepared by the Authors (2023).

The Board reflects the aggregating characteristic that each concept carries with it, although it is possible to use them in a well delimited manner, above all when it is necessary to explain the complex phenomenon of the digital skills necessary for digital education throughout life. The model below (figure 5) suggests the interrelationship of these abilities.
Thus, as noted, the acquisition and enhancement of digital skills are essential for digital education throughout, empowering individuals to fully participate in the digital society, critically evaluate information, and use technology effectively and securely in various spheres and stages of life. These skills not only facilitate access to information, but also promote active and responsible participation in today's digital society.

5 CONCLUSION

Digital skills in the context of lifelong digital education are essential to qualify individuals to adapt and thrive in an increasingly technology-driven world. In the course of this study, a thorough analysis was conducted, based on the definitions found in the most cited authors, in order to understand the concepts commonly related to these digital skills, in a scientific database, namely: "Computer Literacy", "Digital Literacy" and "Digital Competence". The Descending Hierarchical Classification (CHD) analysis revealed seven representative classes of the dimensions in question with a validity of more than 80% of the sample collected.

The "Computer Literacy" dimension was the one that presented the most cohesive content with the seminal literature raised. It was confirmed that the concepts of "Digital Literacy" and "Digital Competence" really present themselves in a slightly more fluid way. However, statistical and semantic results make it possible to draw each dimension.

To simplify the understanding of these concepts, a model has been suggested that shows the interrelations and dependencies of dimensions, highlighting how they are intrinsically linked and often overlap. The proposal aims to provide a clearer framework for the study of digital skills in digital education throughout life, recognizing the nuances and complexity of these constantly evolving concepts.

The study highlights the importance of digital skills in contemporary society, emphasizing the need to empower individuals to interact effectively and ethically with digital technologies. The dimensions "Computer Literacy", "Digital Literacy" and "Digital Competence" play interconnected roles in the formation of competent individuals in the digital age, promoting digital literacy in its various facets. As limitations, the exploratory nature of the research stands out, with a numerically reduced sample. For future studies it is suggested to statistically test the proposed conceptual model. Once outlined, the perspective is that this study will contribute to a clearer and more comprehensive understanding of digital skills and their application in digital education throughout life, contributing to training, training, lectures or practical workshops that can improve these skills in subjects.
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