

Media Competencies and Social Development: A Systematic Review

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Abstract

Media competencies are skills and knowledge necessary to understand, use, and critically evaluate the media. These competencies are aligned with ICT, establishing a connection for social development. This study aims to explain how media competencies are manifested in such development. First, a historical overview of some media is presented. Then, the various dimensions of media competencies are explained, such as language, production, technology, interaction, values, and aesthetics; all from a developmental viewpoint. To achieve this objective, a documentary review was used and it was found that there is a link between language, technology, production, and interaction, values, and aesthetics. This link does not limit the understanding of other forms of relationship between competencies. Likewise, these media competencies are essential for critical and responsible participation in the digital society, improving equitable and sustainable social development.

Keywords

Media Competence, Social Development, ICTs, Interaction competency

1. Introduction

Today's ways of communicating generate faster interaction than those of a few decades ago. ICTs, together with social networks, allow information to be transmitted efficiently and dynamically. It can be said with conviction that ICTs have been one of the main causes of society's progress in economics, science, and communication [1]. In this sense, the desire to communicate generates innovation and all innovation tends to be communicated.

Because of their social disposition, human beings are communicators; to this end, they generate new ways of transmitting and receiving information. Now, social networks such as TikTok and Instagram are booming, however, everything varies, and this case will not be the exception. In a few years, these applications will be left aside and others will arrive; but, the sense of human communication will not be reduced, on the contrary, it will become greater and with massive information.

ICTs have been the great allies of media competencies. Without these technologies, the flow of information would not be carried out as it has been and still is [2]. The relationship between ICT and media skills has greatly influenced social development in economic and political fields. Without this media power, candidates would not be elected and philosophical trends would be unknown.

The media vision grants several visions, positive and negative. Some media are social manipulators. Most of the masses are not aware of fake news or half-told facts. To reach media competence, one must go through several developmental processes. Literacy has its meeting point with technology, media and education.

Media competencies would not be what they are without all the resources and tools they have gone through. These skills have evolved and will continue to do so in more complex terms. The amount of information will grow, the learning will be new, and the resources will be perfected. For this reason, we

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invite a temporal review of the media resources and tools that have contributed to media competencies and their classification.

2. Media and Communications

The memory of how the twentieth century began a transformation and integration of communication channels with the passage of writings, images, symbology, and words to sound and visual artifacts such as television and radio, makes us understand its progress. This insertion changed the form of communication and broke the local information barrier and moved to the international one, which caused many countries to open up to the world. All these processes involved phases of communicational changes such as computer and information systems.

The relatively short course of communication progress in the 20th century is marked by three important stages. 1) the 1920s, where radio competes with journalism; 2) the Enlightenment era of the 1970s, where magazines compete with television, and; 3) the 1990s with printed, digital and online tabloidization [3]. On the other hand, the telephone industry was the development representation of the 20th century [4]. The telephone continued to dominate throughout that century, but with more strength after the eighties [5].

Then, with the emergence of the computer and the cell phone, people began to reduce temporal and geographical spaces; and even more with the emergence of the Internet. Television also had audiovisual preponderance in all institutions [6]. Over the years, information itself became one of the most important production factors ever recorded [7].

Subsequently, the new ideology of online network interaction, with web 2.0 technologies, turned the ordinary Internet user into a creator of digital concentration and, in doing so, began to shape virtual communities and social networks [8]. This probably led to real-world skills, including communication, collaboration, and critical thinking [9, 10].

The use of all communication resources, whether analog or digital, allows society to handle a large amount of information, provide feedback, and generate new knowledge. This would not have been possible without connectivity, which established a new communication paradigm. The first efforts were aimed at ensuring connectivity through the installation of networks, equipment, or computer systems [11].

Internet-born applications have the potential to increase operational efficiency, reliability, and security. Also, without the Internet and connectivism, information could not develop at the current level. The various digital narratives and productions, which include audio, video, images, and text, are fundamental to deliver an effective piece of communication.

There are two problems here: the first is access to different applications or information, and the second is the lack of knowledge of their use. These ideas provide a clearer vision of the role of digital narratives as a basis for teaching in permanent feedback environments. In this connected world, the conception and development of audiovisual elements as teaching and training mechanisms allow, unlike traditional media, a transfer and assimilation of content in spaces where individuals are also creators.

3. Media Competencies

The importance of connectivity is based on the fact that the digital scenario requires a fusion of processes due to its changing nature. Through connectivity and diverse approaches to transmitting content, the necessary conditions are created for users around the world to participate, assimilate the material they interact with, and choose the form and manner in which they will navigate to engage with the topic of their choice or those suggested by a platform. However, interaction is not possible if individuals do not have the necessary skills to do so.

The largest percentage contributing audience and connectivity in digital media are people aged 18-34¹. As age increases from 34, interaction decreases. It is understood that this may be that the age of

¹Informe Global Digital: <https://bit.ly/2RqiCdp>

older people influences to some extent the knowledge of use and disposition of digital platforms.

Linking learning to emerging spheres of influence and ensuring a level of agility is of great benefit to individuals [12]. Learning processes cannot remain anchored to models that are no longer valid; it is a matter of facilitating, with the help of new narratives, the reception of content and the implementation of each of them. If technology has contributed anything, it is precisely in renewing, updating, and presenting variations in the already established forms of training, exchange, and learning.

To understand how media competencies are involved in social progress, it is first necessary to have a clear vision of what they are. They are defined as a set of skills, abilities, attitudes, and inclinations that all people must possess to consume and produce information critically and actively, in a context that goes into an accumulation of disordered knowledge or misinformation [13, 14].

Media competencies are found in people at a basic and generic level and, depending on their development and occupation, they become specific. In other words, at present, media competencies have become capabilities that all individuals need in their daily lives; the difference lies in the level of appropriation. Most individuals who only consume information are at a basic level and prosumers at a specific level.

Competencies have several classifications and media competencies are not far behind. For social development, the classification is taken as follows: Language, Technology, Interaction, Production, Values, and Aesthetics [13, 15]. The organization of these competencies has been refined over the years [13]. It is worth mentioning that this classification is taken from the dimensions of media competencies and adapted as dimensions of development since they have a bidirectional connection. For example, technology benefits communication, and the need to communicate motivates the development of technology; communication produces, and production communicates.

In recent years, media competencies have tried to enter the educational curricula. The educational system has to germinate them. However, this concept can be developed in practice. In this sense, it has become a back-and-forth effort for its development. The question is: are people trained to face reality critically? From all this, it is understood that media competence is fundamental to be formed as active, critical, and responsible citizens, in essential environments such as the digital, multimedia, and complex [15].

4. Social Development

The technological transformation of the new millennium is characterized by the interconnection of computer, information, and communication technologies, which facilitates the performance of diverse tasks in multiple areas. This convergence has a significant impact on communication mechanisms and establishes a new terrain where citizens exercise greater control when sending, exchanging, or receiving information [14].

The challenges are centered on participation and the development of empowerment, which are achieved when the right conditions are in place, such as latent equity and equal access to the media. The challenges of fostering social development are closely linked to the quality of the education offered and its adaptation to the new information media. With adaptive and quality education, people must be empowered in social networks, both as consumers and prosumers.

Figure 1 shows how media competencies are interconnected. In the left sector are the competencies that contribute to production: language and technology. In the right sector, there are the competencies that benefit interaction: values and aesthetics. However, being a complex system, they should not be considered as separate competencies; rather, they are all interrelated and contribute to each other. For example, aesthetics contribute to production, values enrich language, and technology facilitates interaction.

All these competencies play a crucial role in social development from a formative perspective. Education, based on sound theory, practice, and ethics of these six competencies, enables individuals to empower themselves by taking ownership of their media skills. In addition, future sustainability is ensured by preparing individuals for a constantly changing environment, while entertainment, driven

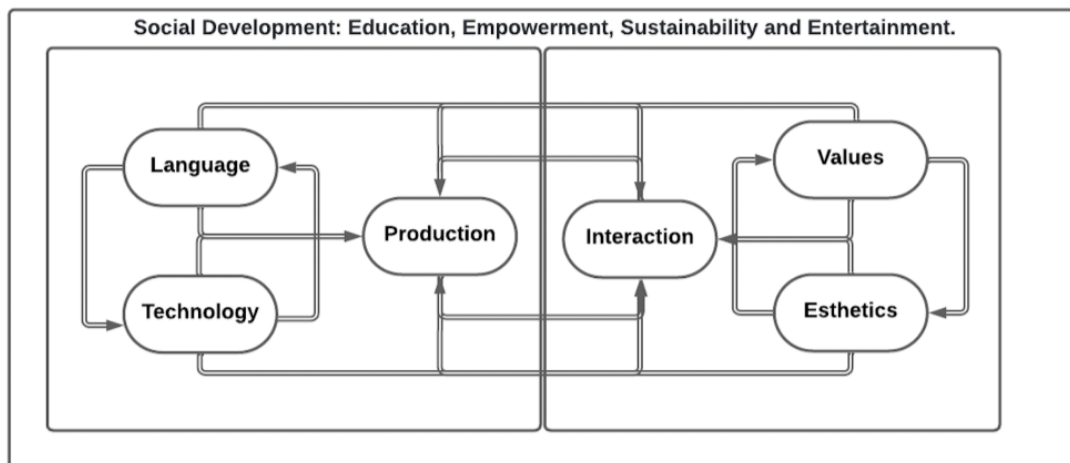


Figure 1: Media skills in social development

by creativity, fosters more dynamic and engaging learning. These competencies contribute to social development by promoting more active and informed participation in society, facilitating effective communication, and enriching interaction in diverse contexts.

From a developmental perspective, the six dimensions of media competencies are presented (Table 1). These competencies are essential for people to understand, interact, and express information [16]. In other words, people must go through a process of understanding (indistinct level) before interacting and, finally, expressing their ideas through messages and other forms of communication. This analysis highlights the importance of the active participation of individuals in their role as consumers, producers, and prosumers, and how this participation contributes to social development. Each dimension of media competence plays a crucial role in the formation of informed and engaged citizens.

4.1. Language

Language is the basis of media communication. It involves not only an understanding of the different types of language (verbal, visual, audio) used in the media but also the ability to interpret and create effective messages. Linguistic competence provides an understanding of how meaning is constructed in different media contexts and how language can be used to influence audience perception and action.

Language is considered as the ability to understand and evaluate different representational codes, to examine and judge messages in terms of their meaning and narrative structure, and to establish intertextual connections [13]. Language can also be divided into two aspects: on the one hand, the ability to interpret and evaluate representational codes in messages and establish connections between different texts; and on the other hand, the ability to communicate in a variety of ways, transforming existing products and giving them new meaning [15].

This dimension focuses on the knowledge, skills, and abilities to interpret messages [17]. The interpretation of the message must be understood in different formats: oral, textual, visual, and even sensory. This is the first competence that collaborates with social development. Without language, humanity would not be where it is. Every person, nation, and culture has different ways of communicating. The interpretation of language is unique, but it can be acquired; it can be learned.

Media languages have been linked from their beginnings to inevitable moments of human evolution, which allowed literate people to master codes to perform in different roles and occupations [18]. Written language is necessary to record and transmit ideas, to shape the ephemeral into something permanent, to formulate a vehicle for communication and to convey messages [19].

Languages change. Languages are transformed. The codes used centuries ago are different from those used today. Alphabetic codes are changing to audiovisual and digital formats [20]. This situation demands more and more the development of language as a media competence.

Table 1
Media competencies in the understanding and expression of people

Dimensions	Comprehension	Expression
Language	Interpret and value codes in messages. Analyze narrative structures, genre, and format conventions. Understand the flow of stories and information in different media and platforms. Study the relationships between texts.	Express themselves with diverse systems of representation and meaning. Choose appropriate representation systems and styles for each communicative situation. Modify existing products to give them new meaning and value.
Technology	Critically evaluate and select content. Explain why certain media are chosen. Understand who the content is aimed at. Create inclusive environments that respect cultural diversity.	Handling communication tools. Adaptation of technological tools to communicative needs. Manipulation of images and sounds.
Interaction	Critically evaluate and select content. Explain why certain media are chosen. Understand who the content is aimed at. Create inclusive environments that respect cultural diversity.	Attitude towards construction through technology. Development of group proposals and interaction with other users.
Production and diffusion	Differences between individual and collective productions. Factors that condition messages in corporate productions. Basic production, programming, and broadcasting systems. Copyright regulations.	Knowledge of production processes and necessary equipment. Collaborative work. Ability to share and select information to form audiences. Development of online identity. Building collaborative networks. Responsibility in copyright processes.
Values	Evaluate the impact of content on social, economic, and political development. Search, organize, and synthesize information from different systems and contexts. Maintain an ethical and responsible attitude in the use and citation of sources. Manage emotions related to ideology and values on screens.	Use of new communication tools to transmit values. Development and modification of products according to social demands.
Esthetic	Reflect on what and how to communicate. Recognition of aesthetics according to parameters. Relate media productions with other artistic manifestations. Identification of basic aesthetic categories, considering style and trends.	Production of messages that promote creativity and originality. Appropriation and transformation of products to enhance and innovate.

4.2. Production and diffusion

Production as a competency and development dimension refers to the ability to create content in different platforms and formats. This includes the production of multimedia in videos, images, podcasts and even social networks. Production is adaptive, just like language, as it depends on the media for which it is intended.

Communication, through language, is the root of production. Producing to market, sell, and buy generates competitiveness. Although marketing is not the main objective of media competencies in production, both share the same purpose: to sell in a tangible or intangible way. Most people can produce data-driven information, but they do not always achieve the desired impact and scale.

These competencies can be classified into: the ability to distinguish between types of production, such as individual, collective, corporate, popular, public, and private; and knowledge of socio-economic factors of production systems and dissemination methods [13]. Never before has it been so easy to produce and disseminate content as it is now. Context and technology have led to multiplatform production [21]. Production, in conjunction with language, creates communicative efficiency to reach more people in the shortest possible time.

The production dimension involves knowing the processes, how, and for what purpose it is produced [20]. Answering how it is produced refers to the means and forms to be used to communicate. The resources, tools, and ways of communicating determine the production formats, i.e., what is produced. Communication production can range from an influencer in social networks to an academic in scientific production.

We are invited to consider a meta-production, that is, to produce about production. This reflection will allow us to redefine the forms of the product, encompassing literature, cinema, television, and

social networks, among other media. To achieve true social progress, it is necessary to consider not only media production but also artistic, political, economic, scientific, and cultural production. The forms of media production must be reformulated as a source of income, and also as an opportunity to share knowledge, creativity, emotions, science, and reality. Not everything should be left in the hands of journalism.

Content production needs to make ethical use of information, using reliable and contextualized data [22]. Otherwise, social progress will stagnate until thoughtful production for well-being is achieved. This dimension is linked to the sustainable development goals, and this is where educational-media competencies are applied. The media competencies acquired by various subjects in different contexts require a reflective, creative, and critical view to solve problems. These competencies must generate content that motivates advancement and development, leaving aside reproductive work [23].

Some emerging technologies will be subject to permanent and forced changes, where production and dissemination programs, cyberspace, and intelligence will be an inseparable part of all media and contents that are currently already in a market that demands the integration of several systems in a single product [24].

4.3. Technology

Technologies are probably the most closely linked to social and economic development. They are how information is disseminated. For decades, technologies have been responsible, through language and production, for disseminating information. They have done so increasingly rapidly, eliminating geographical and time barriers.

Without technology, information would be slow and would not have the reach it has achieved. As mentioned above, there is a directly proportional relationship between communication and technology. These two (communication and technology) have been allies since language is needed to communicate with a distant receiver. Technological competence includes the handling of digital tools and the understanding of ICTs, allowing people to access information, communicate, and collaborate effectively. This dimension points to the effectiveness of using ICT to manage, adjust, and produce with the right tools.

Without technology, communication would be slow and seem non-existent. But technology would not exist without people. The raw material of technology is not only the minerals, materials, and elements with which it is constituted but also the human mind, which with its creativity produces [25]. Therefore, before making use of technology, it is necessary to have other human capacities, such as solidarity and respect.

Due to rapid technological advances and social and professional changes, people have had to adapt and develop new ways of communicating information to meet changing needs. Instead of focusing solely on the physical space, they must now create innovative digital services. In addition, prosumers have taken on the role of educators, fostering critical thinking in society [26]. Undoubtedly, the use and generalization of digital technology facilitate this task by requiring lower infrastructure costs compared to traditional media [27].

Information and Communication Technologies (ICT) have facilitated access to a large amount of information, but they have also complicated the process of gathering relevant and reliable content. For this reason, it is necessary to develop skills to identify and select appropriate information sources, evaluate their reliability and credibility, and effectively organize information [28].

Currently, we exist in a context where new technologies have influenced all aspects of life. Terms such as "digital age", "Internet age", "knowledge society" and "disinformation" are used [29]. However, it is also necessary to demand from technologies the right to quality communication [30].

In the current environment and within the framework of social literacy, ICTs are partly responsible and protagonists of a change in the information society, in which a large part of the conglomerate is immersed, with social activity mediated by technology. This requires new literacies for new media [31]. Technological and media competence is relevant to know the level of ability or skill that each person possesses concerning the technological changes that society is undergoing. This set of transformations

reflects the degree of penetrability that information and communication technologies exert on the population [32].

This is because accessibility influences various sectors of society, such as education, commerce, culture, and entertainment, among others. Accessibility is considered as a conglomerate of technologies that, together with an appropriate design, favor a global access, for people who do it from different points and using different mechanisms. For this reason, before talking about digital spaces, it is necessary to consider the options for navigation and access to them.

Technology, at this time, is the basis of social progress and the development of work and personal activities. Although this aspect is associated with an evolution in the forms of communication, it also implies some risks. If not worked properly, these risks can lead to information saturation, as a result of a limitation at the moment of receiving content and not having the tools to interpret the excess of information that is presented daily. Interactive contexts facilitate an exchange of criteria among several people to improve their understanding and, based on this, develop a firm idea about some aspect.

The composition of various technologies has greatly improved people's cognitive and communication capabilities. Access to unrestricted digital systems has improved life in technical terms and has opened up a range of possibilities with respect to obtaining knowledge and new learning opportunities. As a result of a revolution brought about by the Internet, technological convergence is not static; it is modified, updated, and, above all, integrates new resources in accordance with social progress.

In the future, advances in science and technology will generate even more interactivity, as systems are constantly mutating. It is expected that, in a few years, there will be widespread digitalization on which all human activities will depend, guided only by a user's gesture or voice.

4.4. Interaction

Interaction competency refers to the ability to communicate and collaborate with others through digital media. This includes skills for participation in social networks, forums, and other online platforms, fostering constructive and respectful dialogue. Social networks have introduced new forms of communication and languages that have emerged from the processes that occur in these environments. These new ways of interaction have completely transformed the linear models of participation, with adolescents and young people in particular strengthening and diversifying them.

Three effective interaction practices for presenting communication technologies to users are (1) managing motivations for social network use, where participants minimize interest in participating in online activities; (2) calibrating amounts of social network use, where participants refer to time and participation; and (3) identifying investments in social network use, where participants implement categories and identities that position their use of technology as appropriate or inappropriate [33].

With the changes in the media, the forms of social interaction, the assumed leaderships and the audiovisual facilitates the processing of information in the citizens are also modified. Effective interaction with the media is only possible if all the aspects related to its exercise are understood since it is impossible to establish an opinion on something that is not mastered, not understood, or for which no previous instruction has been received.

This media competence is composed of two fundamental aspects: the ability to choose, analyze, and self-evaluate media consumption and the understanding of what preferences and needs are satisfied by the various media products; and the ability to assess the cognitive effects of the emotions generated by the media. Thus, it encompasses basic knowledge about the management of entertainment media and interactions between media and users [13].

4.5. Values

Media competencies also include the ethical dimension, which encompasses the understanding and application of values such as responsibility, honesty, and respect in the use of the media. This dimension is fundamental for the development of critical and ethical citizenship. Teaching media values is crucial to counteract misinformation and promote responsible media use [34]. The ideology and values

dimension should be reinforced so that people take advantage of the new communication tools to develop values, and contribute to the improvement of the environment from an attitude of social and cultural commitment [16].

In the ideology and values dimension, the main aspects include the ability to discover how media representations structure the perception of reality, often through inadvertent communications. It also involves the ability to assess the reliability of information sources, drawing critical conclusions from both what is said and what is omitted [35].

In the field of formal education, the school should encourage a reflective view that is scarce in most media practices, putting into perspective the values that are transmitted through the media, from the popular to the widespread, and on the homogenization processes (aesthetic, cultural) that are promoted in these environments [36]. From this point of view, media competence, in its dimension of values, is motivated to promote the fight against inequalities in the areas of gender, democracy, education, environment, and health.

Media thinking offers a dual vision of ethics. On the one hand, there is the perspective of content producers and their desire to obtain results for their personal benefit. On the other, there is the consumers' view. In this sense, a call is made to these two agents of modern communication. Prosumers must reflect on the society they are shaping with their content, and consumers must meditate on the information they accept based on ethical principles and social responsibility. Social development will not be achieved without a critical view of the information in the media.

4.6. Esthetics

Aesthetic competence refers to the appreciation and creation of media content with artistic quality. This includes the ability to analyze and value aspects such as design, visual narrative, and production quality. This competence enriches the media experience and fosters creativity [16].

Aspects of aesthetics include the ability to understand how the media construct socialized realities; the ability to evaluate the reliability of a news source and to search, organize, contrast, prioritize, and synthesize information; the ability to detect the underlying intentions or interests in media products; and the ethical attitude towards downloading news, as well as the ability to understand the emotional content of media products [13].

This dimension is closely linked to the awareness of the aesthetic tools that the media use to exert influence, generate emotions, and convey a message more credibly and attractively. When considering aesthetics, it also addresses the ability of users to enjoy formal and informal aspects, considering what and how it is communicated [13].

This dimension is fundamental for understanding how the media construct realities, assessing the reliability of information sources, and searching for, organizing, contrasting, prioritizing, and synthesizing data. In addition, it allows us to detect the intentions and interests behind media products and to develop ethical attitudes towards new content. It also provides the necessary skills to understand the emotional content of media [37].

In the context of development, aesthetics plays a unique role in presenting information according to what the sender wishes to communicate, always respecting the receiver's ideas. It also encourages creativity and innovation in the products offered. In a world where innovation is essential, products must constantly evolve, and society, in turn, demands novel, creative, and aesthetic results.

5. Conclusions

In conclusion, media competencies are key to social development, since they enable citizens to participate critically and responsibly in the information and communication society. Recent studies show the incidence of these competencies in different social spheres. It is essential to continue researching and promoting the development of these competencies in the population to contribute to a more equitable and sustainable social development.

Media competencies are fundamental to navigating and taking advantage of today's digital environment. These competencies, which include skills in language, technology, production, interaction, values, and aesthetics, are essential for individuals to participate actively and critically in society. The incorporation of these competencies in educational curricula is crucial to form informed, critical, and responsible citizens.

Technology plays and will play a crucial role in the elimination of geographical and time barriers in communication, facilitating rapid and broad access to information. In addition, technological convergence has enhanced people's ability to create, disseminate, and consume content, promoting a more dynamic and enriching interaction in diverse contexts. This technological advancement has improved cognitive and communicative abilities and has fostered creativity and innovation, essential for social and personal development.

The connection between mediated competencies for development is evident. There are several ways and different possibilities in which they converge. The order presented is one of them: language, technology, production, interaction, values, and aesthetics. This link does not limit the understanding of other forms of relationship between competencies.

References

- [1] M. Leon, M. V. Hinojosa-Ramos, A. León-Lopez, S. Belli, C. López-Raventós, H. Florez, Esports events trend: a promising opportunity for tourism offerings, *Sustainability* 14 (2022) 13803.
- [2] A. Morante, M. del Pilar Villamil, H. Florez, Framework for supporting the creation of marketing strategies, International Information Institute (Tokyo). *Information* 20 (2017) 7371–7378.
- [3] V. Popović, P. Popović, The twenty-first century, the reign of tabloid journalism, *Procedia-Social and Behavioral Sciences* 163 (2014) 12–18.
- [4] D. Trudel, F. Tréguer, Alternative communications networks throughout history, Ph.D. thesis, ISCC-CNRS, 2016.
- [5] R. Rymarczuk, Same old story: On non-use and resistance to the telephone and social media, *Technology in Society* 45 (2016) 40–47.
- [6] A. C. Samson, J. J. Gross, Humour as emotion regulation: The differential consequences of negative versus positive humour, *Cognition & emotion* 26 (2012) 375–384.
- [7] C. I. Büyükbaykal, Communication technologies and education in the information age, *Procedia-Social and Behavioral Sciences* 174 (2015) 636–640.
- [8] T. Khvatova, S. Dushina, G. Nikolaenko, Do the online activities of scientists in social professional networks influence their academic achievements?, in: *European Conference on Management, Leadership & Governance*, Academic Conferences International Limited, 2017, pp. 217–226.
- [9] P. Teo, Teaching for the 21st century: A case for dialogic pedagogy, *Learning, Culture and social interaction* 21 (2019) 170–178.
- [10] O. Mendez, H. Florez, Applying the flipped classroom model using a vle for foreign languages learning, in: *Applied Informatics: First International Conference, ICAI 2018*, Bogotá, Colombia, November 1-3, 2018, *Proceedings* 1, Springer, 2018, pp. 215–227.
- [11] T. J. Prólogo, digitalización del patrimonio: archivos, bibliotecas y museos en la red, 2014.
- [12] G. Renda, B. Kuys, Connectivism as a pedagogical model within industrial design education, *Procedia Technology* 20 (2015) 15–19.
- [13] L. M. Romero-Rodríguez, P. Contreras-Pulido, B. Castillo-Abdul, Competencia mediática en la universidad: comparativa de niveles en cuatro países iberoamericanos, in: *Comunicación y diversidad. Selección de comunicaciones del VII Congreso Internacional de la Asociación Española de Investigación de la Comunicación (AE-IC)*. Valencia, España, 2020, pp. 28–30.
- [14] B. Rivera, M. Leon, G. Cornejo, H. Florez, Analysis of the effect of human capital, institutionality and globalization on economic complexity: Comparison between latin america and countries with greater economic diversification, *Economies* 11 (2023) 204.
- [15] R. García-Ruiz, A. P. d. M. Matos, A. Arenas-Fernández, C. Ugalde, Alfabetización mediática

- en educación primaria. perspectiva internacional del nivel de competencia mediática, *Pixel-Bit, Revista de Medios y Educación* (2020) 217–236.
- [16] J. Ferrés, A. Piscitelli, Media competence. articulated proposal of dimensions and indicators, *Comunicar* 19 (2012) 75–81.
- [17] W. A. M. Romero, M. d. C. F. Morante, B. C. López, Alfabetización mediática crítica para mejorar la competencia del alumnado, *Comunicar: Revista Científica de Comunicación y Educación* (2022) 47–57.
- [18] A. M. B. Flandoli, J. M. S. Eguiguren, Media and digital literacy: From particularities to encounters and possibilities, in: 2021 16th Iberian Conference on Information Systems and Technologies (CISTI), IEEE, 2021, pp. 1–6.
- [19] S. O. Baltierra, Letragrafía: Síntesis y comunicación visual, *VISUAL REVIEW. International Visual Culture Review/Revista Internacional de Cultura Visual* 7 (2020) 27–37.
- [20] L. Andrade Vargas, M. Iriarte Solano, D. Rivera-Rogel, I. Marín-Gutiérrez, A. Velásquez Benavides, Media literacy of high school students in ecuador against the school curriculum, 2019.
- [21] A. M. B. Flandoli, Empoderamiento mediático en la era de los ‘producers’. Trasladar el potencial de YouTube e Instagram al proceso de aprendizaje en la Universidad Ecuatoriana, Ph.D. thesis, Universidad de Huelva, 2023.
- [22] J. Cuevas Salvador, Relación entre objetivos de desarrollo sostenible y alfabetización mediática e informacional, 2022.
- [23] A. Díaz, S. Echeverri, Las competencias: propuesta teórica para orientar su desarrollo con una didáctica pertinente, *COMPETENCIAS EN LA EDUCACIÓN SUPERIOR: experiencias investigativas y enfoques innovadores* (2020) 87–104.
- [24] B. Rahnavard, K. M. Khani, A. Farhanghi, A. H. M. Davoudi, Designing a model of acceptance new media technologies (media convergence emphasis), *Online Journal of communication and media technologies* 7 (2017) 43–60.
- [25] E. Martínez Salanova, Aprendizaje y creatividad en la educación para los medios. foreword i. ávila pietrasanta, Apantallad@s. Manual de Educación para los Medios y Derechos de la Comunicación en radio y video para niños (2014).
- [26] A. da Silva, Alfabetización mediática e informacional en suecia: la clave de la democracia y el papel del bibliotecario como mediador, *Revista Ibero-Americana de Ciência da Informação* 14 (2021) 501–514.
- [27] C. Sádaba-Chalezquer, R. Salaverría-Aliaga, Combatir la desinformación con alfabetización mediática: análisis de las tendencias en la unión europea, 2023.
- [28] J. L. Hernández Marín, M. D. Castro Montoya, S. Figueroa Rodríguez, Alfabetización mediática, informacional y digital: análisis de instrumentos de evaluación, 2024.
- [29] A. García Roca, J. M. d. Amo Sánchez-Fortún, et al., La alfabetización mediática e informacional en un contexto de desinformación, 2023.
- [30] F. Saurwein, C. Spencer-Smith, Combating disinformation on social media: Multilevel governance and distributed accountability in europe, *Digital journalism* 8 (2020) 820–841.
- [31] N. G. Fernández-Villavicencio, Alfabetización para una cultura social, digital, mediática y en red, *Revista Española de Documentación Científica* (2012) 17–45.
- [32] D. Rivera, C. Mier, A. Velásquez, Competencia mediática de periodistas de ecuador y colombia. dimensión lenguaje y tecnología, 2018.
- [33] J. S. Robles, S. DiDomenico, J. Raclaw, Doing being an ordinary technology and social media user, *Language & Communication* 60 (2018) 150–167.
- [34] D. Buckingham, Teaching media in a ‘post-truth’ age: fake news, media bias and the challenge for media/digital literacy education/la enseñanza mediática en la era de la posverdad: fake news, sesgo mediático y el reto para la educación en materia de alfabetización mediática y digital, *Culture and Education* 31 (2019) 213–231.
- [35] I. Marín-Gutiérrez, D. Rivera-Rogel, A. V. V. Benavides, R. G. Ruíz, Competencias mediáticas en estudiantes universitarios/as de iberoamérica, *Revista Prisma Social* (2019) 73–93.
- [36] S. McKenney, T. Reeves, *Conducting educational design research*, Routledge, 2018.

- [37] L. M. Romero-Rodríguez, P. Contreras-Pulido, M. A. Pérez-Rodríguez, Media competencies of university professors and students. comparison of levels in spain, portugal, brazil and venezuela/las competencias mediáticas de profesores y estudiantes universitarios. comparación de niveles en españa, portugal, brasil y venezuela, *Culture and education* 31 (2019) 326–368.