

# We Were All Once Analogue... Natives, Immigrants, and the Emergence of Homo Digitalis. The Fiction of a New Species

Daniela SIMIONOVICI<sup>1</sup>

## Abstract

*The conceptual distinction between “digital natives” and “digital immigrants” has become, over the past two decades, a common explanatory framework in analyzing generational attitudes toward technology. Initially proposed by Marc Prensky, this dichotomy has been widely adopted in educational and social contexts, despite its tendency to oversimplify the actual behaviors of users. These labels suggest an artificial segmentation, rooted more in cultural assumptions than in robust empirical criteria. By attributing a “native competence” to younger individuals and assuming a structural difficulty among adults, the discourse risks reducing complex realities and overlooking relevant factors such as individual exposure, motivation, learning processes, and social context. Subsequent alternatives, such as the typologies proposed by Zur and Walker (2015), highlight the need for more flexible interpretative models that reflect the diversity of attitudes and ways of engaging with the digital universe. Instead of a chronological and hierarchical interpretive grid, a more nuanced approach is gradually emerging, one that values individual experiences, everyday practices, and the incremental processes of technological integration. In this light, differences in digital competence are no longer treated as biological or generational givens, but as outcomes of educational and cultural dynamics. This reconfiguration allows for a more realistic and contextualized understanding of how individuals interact with digital technology in contemporary society.*

**Keywords:** digital natives; digital immigrants; technology adoption; digital literacy; cultural constructs; generational labels.

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<sup>1</sup> Vice president of the Association of Privacy and Data Protection Specialists, Romania, [dsimionovici@gmail.com](mailto:dsimionovici@gmail.com)

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## **Introduction**

For more than two decades, the academic literature in the fields of education, social psychology, and communication sciences has been marked by the establishment of a conceptual opposition between “digital natives” and “digital immigrants,” an opposition introduced by Marc Prensky in an article that became a reference point for theories concerning generational approaches to digital technology (Prensky, 2001a). According to this perspective, individuals born after an arbitrary chronological threshold, most frequently set around the year 1980 (Palfrey & Gasser, 2011), are presumed to possess a natural familiarity with new technologies, while previous generations are considered compelled to bridge this cultural gap through adaptive efforts that remain, by nature, incomplete. These notions, although seemingly useful for constructing a simplified explanatory framework, raise significant challenges when applied empirically or integrated into rigorous pedagogical and psychosocial reflection. Not only do they induce a forced schematization of individual experiences, but they also suggest the existence of an intergenerational rupture that is not supported by robust empirical evidence concerning everyday interactions with technology.

This article aims to investigate the profoundly metaphorical nature of the “digital native/digital immigrant” dyad and to demonstrate that its conceptual success stems more from the appeal of simplification than from analytical robustness. It will be argued that these labels, once established, have become classification tools used extensively not only in academic discourse but also in educational practices, despite reflecting only superficially the complexity of technological integration processes. In this regard, we signal the need for a theoretical deconstruction of these terms and the proposal of a reconceptualization based on attitudes, motivations, and digital practices, rather than on generational affiliation. The analysis will focus on the context in which these notions were introduced and the mechanisms through which they acquired explanatory value, despite their evident epistemological limitations (Selwyn, 2009). Consideration will be given both to the discursive framework in which they emerged and to their concrete uses in the analysis of educational practices.

The distinction between the digital native and the digital immigrant has often been interpreted as an ontological difference, as if the two types of users belonged to distinct species within the same humanity. This hypothesis, which suggests the emergence of a “new subspecies” in the contemporary digital landscape, is, however, closer

to a cultural fiction than to a scientific diagnosis. The idea of *Homo digitalis*, although rhetorically appealing, risks obscuring the historical continuity of technological transformations and hindering a functional understanding of the phenomenon. As Breton (2001) pointed out in his critical analysis of the discourses about the Internet, there is a real risk that the digital environment may be perceived in a way that detaches it from social reality, weakening critical reflection and reducing the ability to assess its effects on interpersonal relationships. In such a context, classifications tend to be less about understanding the social world and more about perpetuating convenient narratives (Breton, 2001).

Rather than considering digital technology as a marker of radical rupture, it is more productive to place it within the trajectory of a continuous cultural evolution, in which differences between individuals derive from exposure, interest, utility, and learning, not from age or technological “nativeness.” Recent studies support this approach by emphasizing the complexity of variables that influence digital literacy and the degree of engagement in technological practices (Pangrazio, 2020). In our analysis, we will revisit these perspectives in order to outline a more flexible conceptual framework that allows for a nuanced understanding of the relationship with technology. We will also examine the typologies proposed by researchers who have attempted to move beyond the classical dyad, offering explanatory models based on behaviors and attitudes (Zur & Walker, 2015). At the same time, we will discuss the role played by language - especially English, the dominant language of digital technologies - in the fixation and dissemination of these concepts in the educational and media space. Finally, the possibility of a relational and contextual approach will be explored, one capable of reflecting the complexity of human interaction with contemporary digital technology, beyond rigid classifications based on generational oppositions.

### **The Genealogy of a Binary Fiction: Digital Native vs. Digital Immigrant**

The formulation of the conceptual binomial “digital natives” – “digital immigrants” is directly associated with Marc Prensky, an author who, starting in 2001, published a series of articles that profoundly influenced pedagogical discourse concerning new generations of pupils and students. In the first article of this series (Prensky, 2001a), “digital natives” are described as individuals born into a technological context already marked by digitalization, capable of interacting intuitively with new technologies, whereas “digital immigrants” are those born before this cultural shift, who must adapt to the new

environments through a deliberate and often difficult learning process. This metaphor, inspired by sociolinguistic terminology, quickly gained traction and was further developed and refined in subsequent texts by the same author (Prensky, 2001b; 2009). The binomial thus became established as a framework for interpreting intergenerational differences in relation to technology, and was later adopted in works addressing digital education, communication, virtual socialization, or the development of digital competences (Palfrey & Gasser, 2008). The initial adoption of these concepts in academic literature was facilitated by their intuitive appeal and seemingly simple explanatory potential, at a time when formal education was beginning to face the demands of an expanding digital world. Implicitly, this dichotomy introduces a hierarchy between presumed innate competences and abilities acquired through effort, between spontaneous familiarity and conscious adaptation. Thus, from a metaphorical proposal emerged a conceptual framework that was widely used to interpret the technological behaviours of both young people and adults, despite the lack of rigorous empirical foundation.

Over time, however, Prensky's formulations have been both validated through institutional and educational usage and subjected to numerous methodological and epistemological critiques. These critical responses target, among other aspects, the rigidity implied by this distinction, the risk of stereotypes and overgeneralizations, as well as the neglect of cultural, educational, and social variables in defining the individual's relationship with technology. Within this broader context of attempts to move beyond generalizing explanations, the study conducted by Pangrazio, Godhe, and Ledesma (2020) examines how the concept of digital literacy is defined and applied in three distinct linguistic contexts, highlighting conceptual diversity and the challenges of standardizing a single definition. Numerous recent works also note that the opposition between "digital natives" and "digital immigrants" has often been adopted and applied without a critical analysis of its theoretical validity and of its practical implications for understanding educational processes (Bărbulescu, 2020).

The typologies later proposed by other authors, such as those developed by Zur and Walker (2015), contribute to diversifying the perspective, shifting the focus toward attitudes, motivations, and styles of interaction with technology rather than mere chronological affiliation. Thus, in place of a binary and essentialist model, a broader spectrum of digital profiles emerges, one that more accurately reflects the complexity of learning and adaptation processes. For this reason, a reassessment of the conceptual framework of the dyad becomes

necessary, not to replace it with a new dichotomy, but to open the way for more flexible, contextual, and experience-based approaches.

*The role of the English language as the “native language” of digital technologies - the impossibility of translation without loss of meaning*

One of the essential aspects in understanding the conceptual limits of the “digital natives” - “digital immigrants” distinction concerns the status of the English language as the main medium for articulating the terminology associated with digital technologies. The English language does not function merely as a vehicle of communication, but constitutes an implicit semantic code of digitalization, affecting the way users perceive and interpret the fundamental concepts of the technological world. Many of the key notions of digital discourse, such as “upload”, “stream”, “cloud” or “smart”, possess a polysemy specific to the anglophone context, which is lost or diminished in the functional translations adopted in other languages. Therefore, native access to these meanings requires not only linguistic familiarity, but also cultural immersion in a semantic universe marked by values, metaphors and conventions specific to the Anglo-Saxon space (Selwyn, 2009). This asymmetry is not of a technical nature, but constitutes an epistemological obstacle within intercultural communication, as language becomes a filter that modulates comprehension of digital realities. This is why it is not by chance that many of the theoretical frameworks established in the specialist literature, including those developed by Prensky, were constructed on the basis of assumptions valid in an anglophone context, but potentially distorting in other cultural spaces (Prensky, 2001b).

This linguistic hegemony of the English language in the technological field generates a form of symbolic monopoly over the categories of understanding the digital. By imposing terms and expressions that cannot be equivalently translated without semantic loss, a tacit hierarchy is shaped between those who possess advanced linguistic competences and those who access the digital universe through a translational filter. This difference in access to meaning is not merely a matter of technological competence, but reflects a relation of symbolic power in which some users are culturally advantaged in the process of internalizing digital practices (Gallardo-Echenique et al., 2015). In this context, the mere use of technology does not equate to full integration into the digital logic, as the meanings conveyed by key concepts cannot be mechanically transferred from one language to

another. Thus, the distinction between “digital natives” and “digital immigrants” becomes problematic not only from a temporal or experiential perspective, but also from the perspective of cultural translation. What appears to be a native competence in digital language is, in fact, the result of a dual exposure – linguistic and cultural – that cannot be automatically replicated in other educational contexts (Pangrazio et al., 2020). These observations suggest that belonging to a digital generation cannot be determined exclusively by reference to the moment of birth or the frequency of technology use, but must be correlated with the degree of cultural literacy in the symbolic language of the digital.

*Associating the terms with the idea of a simplified, artificially divided world – a form of conceptual reductionism*

The opposition between “digital natives” and “digital immigrants” represents a relevant example of a conceptual binary with reductive valences, which projects a rigid binary scheme onto a much more complex educational reality. The initial formulation proposed by Prensky led to a mechanical classification of technology users based on year of birth and early exposure to digital environments, without considering the diversity of learning paths, individual motivations and differentiated access to resources (Prensky, 2001a, pp. 2-4). Through the artificial delineation of two supposedly homogeneous groups, this distinction ignores the fact that familiarity with technology is not the result of generational belonging, but of multiple processes of socialization, training and adaptation that take place in varied contexts.

The labels “native” and “immigrant” function as instruments of symbolic coding of pre-established educational roles, which may negatively influence curricular design and pedagogical strategies. Thus, students are often placed within the paradigm of the digital expert, being perceived as possessing advanced technological skills simply by virtue of being born in a certain era. This interpretative framework creates the premises for an unbalanced relationship between educational content and the real needs of students, ignoring possible comprehension gaps or the need for support in the field of digital literacy. On the other hand, the teaching staff is positioned in a space of presumed inadequacy, which may lead to an underestimation of the capacity for training, adaptation and creative use of technology in the educational process (Elaoufy, 2023).

The conceptual reductionism of this dichotomy is not limited to the level of representations regarding competence, but extends to the structuring of educational policies. In some contexts, the use of this

opposition has fueled the adoption of curricular strategies based on the assumption that students do not need systematic training in the technological field. The result is twofold: on the one hand, the neglect of actual digital training, on the other hand, the formation of an institutional imaginary in which differences in access, level or interest are minimized or even ignored. This approach excludes from the outset the need for differentiated adaptation of educational programs to the diversified realities of students and contributes to the strengthening of unrealistic expectations regarding their digital performance (Hakkarainen et al., 2015).

Therefore, labelling individuals through fixed dual categories leads to a distorted reading of the educational reality. Instead of fostering a dynamic and contextualized understanding of how technology is learned, used and internalized, this classification limits the ability of pedagogy to respond in a differentiated and inclusive way to the real needs of those involved. In order to avoid the pitfalls of binary thinking, it is necessary to abandon simplifying conceptual schemes and move towards explanatory models that reflect the plurality of forms of relating to the digital, as these are manifested in real, situated educational practices (Zur & Walker, 2015).

*The danger of naturalizing a cultural distinction as an ontological difference between human categories*

The portrayal of the distinction between “digital natives” and “digital immigrants” in terms of essential belonging to a human category involves a risky conceptual transfer from cultural difference to a presumed ontological difference. This transposition is equivalent to treating a pedagogical construct as an immutable reality, which leads to the consolidation of certain myths about digital competences as natural givens. As a result, cognitive traits are fixed as constitutive elements of generational identity, ignoring the learning, adaptation and social interaction processes that actually determine them. In this perspective, the cultural distinction is reified and becomes an absolute criterion for delineating individual capacities (Selwyn, 2009).

This naturalization is supported through the assignment of definitive attributes to certain categories of persons based on the time of birth or early exposure to technology, without taking into account socio-economic conditions or the educational context. Thus, individuals perceived as “digital natives” are automatically considered competent, and their failures in using technology are interpreted as inexplicable exceptions. On the other hand, “digital immigrants” are

placed in a position of cognitive inferiority regardless of their actual competences or the training efforts they undertake:

*“Those of us who were not born into the digital world but have, at some later point in our lives, become fascinated by and adopted many or most aspects of the new technology are, and always will be compared to them, **Digital Immigrants**.*

*The importance of the distinction is this: As Digital Immigrants learn, like all immigrants, some better than others, to adapt to their environment, they always retain, to some degree, their “**accent**,” that is, their foot in the past. The “digital immigrant accent” can be seen in such things as turning to the Internet for information second rather than first, or in reading the manual for a program rather than assuming that the program itself will teach us to use it. Today’s older folk were “socialized” differently from their kids, and are now in the process of learning a new language. And a language learned later in life, scientists tell us, goes into a different part of the brain.*

*There are hundreds of examples of the digital immigrant accent. They include printing out your email (or having your secretary print it out for you, an even “thicker” accent), needing to print out a document written on the computer in order to edit it (rather than just editing on the screen), and bringing people physically into your office to see an interesting web site (rather than just sending them the URL). I’m sure you can think of one or two examples of your own without much effort. My own favorite example is the “Did you get my email?” phone call. Those of us who are Digital Immigrants can, and should, laugh at ourselves and our “accent.”*

*But this is not just a joke. It’s very serious, because the single biggest problem facing education today is that our **Digital Immigrant instructors, who speak an outdated language (that of the pre-digital age), are struggling to teach a population that speaks an entirely new language.**” (Prensky, 2001a, pp. 1-2)*

This type of categorization fosters a tense educational relationship in which teachers are seen as outdated and students are overburdened by unfounded expectations (Breton, 2001).

The reduction of the complexity of the digital competences acquisition process to a biological given or to generational belonging blocks any form of coherent educational intervention. If technological ability is presumed to be “native” then instruction becomes unnecessary and the real differences in access or learning are no longer visible. This mechanism leads to a forced homogenization of students and to the devaluation of teachers who become targets of a generalized and unfair stereotype. At the same time, educational policies built on this basis risk perpetuating inequalities through the lack of differentiated measures that take into account the heterogeneous reality of digital competences (Gallardo-Echenique et al., 2015).

Such a vision completely ignores the role of context, motivation and learning strategies in the formation of digital competences. From a psycho-pedagogical perspective, digital acquisition is not the result of a biological predisposition but a continuous process influenced by social interactions, learning experiences and real training opportunities. Rigid labeling based on the “native-immigrant” opposition contravenes these perspectives and undermines efforts to create an inclusive educational environment in which the diversity of digital trajectories is recognized and valued (Pangrazio et al., 2020).

### **From Metaphor to Myth - Homo Digitalis as an Imaginary Species**

#### *The Substantivization of Terms and the Temptation of Anthropological Classification - The Emergence of Homo Digitalis as a “New Subspecies”*

The conceptualization of persons born after a certain historical moment as belonging to a “new” digital species is the result of a semantic derivation that originates in the conventional metaphor “digital native” and reaches an implicit anthropological classification. This tendency toward discursive solidification of the metaphor occurs through the progressive substantivization of terms in educational and media discourse in which “digital natives” are no longer viewed as persons exposed from childhood to information technologies but as a distinct ontological category endowed with fundamental cognitive, affective and behavioral traits. Thus arises the idea of an emergent “species,” conventionally named Homo digitalis, which would be distinguished from its predecessors through a native adaptivity, through a specific learning style and through a presumed radically different “digital thinking” (Prensky, 2001a). This labeling, lacking

empirical validation and constructed on rhetorical foundations, contributes to the rigidification of generational perceptions and to the generation of essentializing attitudes toward learning processes.

In the educational and psychosocial sphere, the transformation of a metaphorical construct into a normative one produces significant effects on the relationships between actors. Teaching staff risk redefining their role not through the lens of professional experience, but according to their belonging to a generation considered “outdated” or “digitally immigrant,” which fuels a sense of professional inadequacy and an artificial dissociation from the beneficiaries of education (Elaoufy, 2023). At the same time, persons classified as *Homo digitalis* are projected into a privileged position, supposedly possessing technological competences and accelerated learning abilities by nature, which leads to unrealistic expectations and the disregard of the need for actual training. This approach reduces the complexity of the educational process to a simplifying dichotomy, in which cultural and social differences are transformed into biological essences. Digital learning represents a complex and differentiated process, influenced by factors such as the family environment, the availability of technological resources, the type of educational support provided and the pedagogical strategies used, without being associable exclusively with a particular generation (Bărbuceanu, 2020).

### *Historical cultural ruptures that have reconfigured the human condition*

The 21st century is often perceived as a period of radical transformations driven by digitalization, but the history of humanity has previously experienced defining moments that have profoundly reconfigured the human condition. In order to better understand the current implications of the distinction between “digital natives” and “digital immigrants”, it is necessary to comparatively examine other major cultural ruptures. The introduction of writing, the emergence of printing press and industrialization have each represented epistemic and social leaps that reshaped the relationship between human beings, environment and knowledge. These transformations provide a relevant framework for understanding contemporary changes.

#### *☞ The emergence of writing – the rupture from orality and the fundamental transformation of cultural memory*

The emergence of writing systems in Mesopotamia, around the year 3200 BCE, is considered by a significant part of the specialized literature as a moment of rupture in the history of humanity, with lasting

implications on social organization, forms of communication and knowledge transmission processes. The transition from orality to the use of writing did not represent merely a technological transformation, but altered the relationship between memory, authority and social institutions (Ong, 1982). Writing enabled the preservation of information beyond the limits of immediate communication, contributing to the accumulation and stabilization of complex forms of symbolic organization. In this context, essential changes have been identified in the mode of information management, in the perception of time and in the functioning of normative structures. Thus, writing introduced the possibility of distancing from the utterance, of revisiting and comparing contents, which significantly influenced practices of reflection and analysis. From the perspective of several authors, the introduction of writing generated the premises for the emergence of new types of institutions and for the development of distinct forms of cultural rationalization. Even though the impact of this transition varies depending on the historical context, it can be stated that writing produced a lasting transformation in the relationship between communication, memory and social organization (Goody, 1986).

☞ *Printing press - the rupture from the monopoly of literate elites over knowledge*

The emergence of movable-type printing in the fifteenth century marked a profound transformation in the way knowledge was produced, transmitted and made accessible, representing a defining cultural rupture in the history of humankind. Unlike manuscripts copied in environments controlled by religious or administrative elites, the printing press enabled the rapid multiplication of texts, the standardization of content and the reduction of production costs. This transition contributed to a decentralization of symbolic authority, through extended access to written texts and through the formation of new types of audience - the anonymous, individual reader, who no longer needed oral mediation to access ideas. On a social level, printed works facilitated mass literacy and supported the emergence of new forms of meaning internalization, in which silent reading and personal reflection became common practices (Ong, 1982). In this context, the printing press was not merely a technological tool, but a vector of cultural transformation that shifted the center of gravity of knowledge from oral collectivity towards intellectual individualization. It generated a new type of subject – the autonomous reader – and supported the formation of historical consciousness through the accumulation of materially recorded texts, interpretations and controversies. Thus, the

democratization of knowledge was not limited to the dissemination of information, but reconfigured the position of the individual in relation to intellectual accumulation and to institutionalized systems of knowledge validation, preparing the ground for the educational, religious and political transformations of the modern era (Ong, 1982).

☞ *Industrialization – the rupture from the natural rhythm of life and social reconfiguration*

The transformations brought by the Industrial Revolution mark one of the most profound cultural ruptures in the history of humankind, through the gradual replacement of the natural rhythms of life with a strictly mechanized organization of time and labor. In the case of the British textile industry, the development of factories entailed a definitive detachment from the domestic and agrarian framework, in favor of a standardized, urban environment, dominated by market rules and by the demands of mass production (Smelser, 1959). Everyday life was restructured according to fixed work regimes, time monitoring and the increasingly pronounced separation between the professional and personal spheres (Stevenson, 1993).

This change did not target only the economic structure, but also the individual's relation to their own social context, to authority and to the instruments through which they mediate their existence. In the present article, the choice of the Industrial Revolution as an example of cultural rupture is significant precisely because it offers a useful historical precedent for understanding other major transformations, such as those brought by digitalization. Just as industrialization imposed a discipline of time and a dependency on new technological environments, the digital era determines a profound reconfiguration of the relation to information, to learning and to social identity.

The distinction between “digital natives” and “digital immigrants” can thus be understood by analogy with the transition from a pre-industrial society, based on organic rhythms and direct relationships, to one marked by the abstraction of labor and the increasingly extended mediation of experience through technologies. From this perspective, the rupture produced by industrialization is not only a historical event, but an explanatory model of the way in which technologies constantly redefine the human condition, generating new forms of belonging, exclusion and adaptation (Smelser, 1959; Stevenson, 1993).

*The narrative construction of “digital birth” around 1980 - exaggerations and cultural arbitrariness*

The construction of the idea of “digital birth” around the year 1980 represents one of the most widespread forms of arbitrary generational classification in the age of information technology. In the work *Born Digital: Understanding the First Generation of Digital Natives*, Palfrey and Gasser (2011) define a “digital native” as “A person born into the digital age (after [1980]) who has access to networked digital technologies and strong computer skills and knowledge. Digital Natives share a common global culture that is defined not strictly by age but by certain attributes and experiences related to how they interact with information technologies, information itself, one another, and other people and institutions.” (Palfrey & Gasser, 2011, p. 346). Although this definition introduces an approximate temporal benchmark, the authors warn that belonging to the category of “digital native” is not determined exclusively by the year of birth, but presupposes a combination of access conditions, digital competences and social experiences.

In contrast, the “digital immigrant” is described as “A person who has adopted the Internet and related technologies, but who was born prior to the advent of the digital age.” (Palfrey & Gasser, 2011, p. 346). Thus, although Palfrey and Gasser do not propose a strictly essentialist view, the definition of generations through terms such as “native” and “immigrant” nevertheless contributes to the crystallization of categories that can easily be instrumentalized in simplifying discourses. Frequently, these benchmarks are reiterated in popularizing literature and even in some pedagogical discourses, relying more on cultural conventions than on a rigorous empirical foundation. Establishing a boundary between “digital natives” and “digital immigrants” by reference to the year of birth risks involving a reductive view of cognitive and socio-cultural development, ignoring the profound diversity of educational contexts and of the rhythms of access to digital technologies.

Problematically, temporal delimitations such as those proposed by Prensky (2001a) or adopted in more nuanced forms by Palfrey and Gasser (2011) tend to be naturalized in pedagogical and psychological discourses, acquiring an apparently scientific authority, despite their questionable empirical foundation. Even though some recent formulations avoid a direct association between age and digital competence, the effect of these classifications in educational practice often remains reductive. The academic literature draws attention to the

danger of transforming a narrative convention into a criterion for evaluating digital skills, ignoring the determining influence of the socio-educational context (Selwyn, 2009). In addition, such representations omit the structural constraints that have shaped access to technology, such as educational policies, the level of development of digital infrastructure and socio-economic inequalities (Pangrazio et al., 2020). In this sense, the distinction between “digital natives” and “digital immigrants”, even in its more refined forms, can support a simplifying and normative understanding of the relationship between technology and the individual, to the detriment of a differentiated and inclusive educational perspective.

This generational narrative, although not always explicitly supported by the authors who popularized the terms, has been perpetuated by numerous actors in the educational environment and the public sphere. Instead of investigating the complexity of the interaction between technology, learning processes and digital socialization, such views have sustained the idea that belonging to a certain generation would, in itself, guarantee a set of digital competences. Even if Palfrey and Gasser (2011) emphasize that age is not the exclusive criterion, the simplified adoption of these concepts has fueled the myth of an “innate digital competence” conferred by mere exposure to technology. In reality, adaptation to digital environments is a gradual and educable process, conditioned by factors such as family support, institutional policies and opportunities for continuous training (Elaoufy, 2023). Therefore, benchmarks such as the year 1980 must be understood rather as cultural symbols than as rigorous analytical delimitations.

The attribution of a “digital birth” to a supposedly homogeneous generation ignores the profound variability of individual experiences and learning contexts. More than an objective fact, this idea functions as an explanatory fiction, useful within institutionalized narratives or in simplifying communication strategies, but which carries significant risks of essentialization (Breton, 2001). Consequently, instead of a dichotomy between “digital natives” and “digital immigrants”, a more refined approach is necessary, one that takes into account cultural capital, the level of digital literacy and the structural constraints that determine the concrete way in which individuals interact with technology.

### **Beyond age - typologies and attitudes toward technology**

In an attempt to move beyond the limiting boundaries of the generational division into “digital natives” and “digital immigrants”, Zur

and Walker (2015) propose an alternative classification, centered on the level of familiarity, understanding and comfort in relation to digital technologies, regardless of age. This approach suggests that the relationship with the digital environment is a gradual and complex process, which reflects individual attitudes, practices and preferences, not a simple chronological affiliation. The authors define several types of users, each illustrating a distinct way of interacting with digital technology:

- ☞ *Avoider* - These users consistently avoid modern digital tools, preferring traditional solutions in everyday life. They rely on landline telephony, avoid electronic correspondence and online browsing, and obtain information from printed sources delivered through regular mail. Some are elderly individuals who have not adapted to new technologies, while others, including young people, deliberately adopt a position of rejection toward the digital environment based on critical or ideological convictions - the latter being associated with the neo-Luddite phenomenon<sup>2</sup> (Zur & Walker, 2015).
- ☞ *Minimalist* - Members of this category use technology only when absolutely necessary and with evident reservations. They have an email address or a social media account, but access them rarely. They own a mobile phone, but do not use apps or mobile internet, preferring printed newspapers. Regardless of whether they are “digital natives” or “digital immigrants”, what unites them is the refusal of a full digitalization of everyday life (Zur & Walker, 2015).
- ☞ *Tourist* - Digital “tourists” are users who engage with technology with a certain inner distance, like visitors in a foreign culture. Although they can learn the rules of the online environment, they apply them only, when necessary, without identifying with the values and lifestyles of the digital universe. They may use the internet, apps or social platforms efficiently, but without enthusiasm and without sustained involvement (Zur & Walker, 2015).

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<sup>2</sup> The contemporary neo-Luddite movement encompasses a heterogeneous mix of individuals and groups - writers, professors, students, families, and members of religious or ecological communities - united by a critical stance toward technological expansion. While some, like *Parents Against Underage Smartphones*, frame their position as a form of self-defense against perceived harms, others, such as *Earth First!* act to protect natural ecosystems from technological disruption. Events like the 1996 *Second Neo-Luddite Congress* or the 2001 *Teach-In on Technology and Globalization* offered platforms for shared resistance. Influential voices include Stephanie Mills, Neil Postman (though he rejected the label), and Wendell Berry, with Chellis Glendinning and Kirkpatrick Sale often credited as founders. <https://en.wikipedia.org/wiki/Neo-Luddism>

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- ☞ *Enthusiastic or Eager Adopter* - These users are enthusiastic about technology and curious to explore innovations. They frequently update their devices, actively test new digital products and engage in online communities. They participate in discussions on blogs, social networks, online learning platforms and may become content creators. For them, constant internet connectivity is natural and enjoyable (Zur & Walker, 2015).
- ☞ *Innovator* - This category includes individuals who not only use technology but actively transform it. Programmers, game developers, engineers, teachers or hackers - all contribute to shaping the digital environment through the creation of applications, websites or information systems. They do not limit themselves to consumption but are actors engaged in technological innovation and experimentation (Zur & Walker, 2015).
- ☞ *Over-User or Addict* - In this case, technology is no longer a tool but becomes a dependency that disrupts the balance of personal and social life. These users spend excessive periods of time online, neglecting school, work or personal and family responsibilities. Digital addiction may take the form of compulsive video gaming, excessive consumption of sexual content or aimless browsing on social networks. Despite stereotypes, this behavior can be found among both young people and adults, regardless of their previous level of familiarity with technology (Zur & Walker, 2015).

This classification, proposed by Zur and Walker (2015), highlights the fact that the relationship with the digital sphere is a dynamic and variable phenomenon, shaped by motivations, values and personal contexts and not a simple function of the year of birth.

### **Technology as Cultural Inevitability, Not as Species Rupture**

*All Technological Eras Have Generated Resistance, Fear, Enthusiasm - the Digital Is Not the Exception, but the Continuation*

Each phase of technological transition has consistently been accompanied by contradictory reactions from society: on the one hand, enthusiasm regarding the potential of new tools to transform everyday life, and on the other hand, concern about possible negative effects on social relationships, culture and psychological balance. The industrial age, for example, generated both admiration for the progress of mechanization and opposition movements such as the Luddites, who

expressed fears related to dehumanization and the loss of control over the work environment. From this perspective, the transition to the digital era does not represent a radical rupture, but the continuation of a broader process, characterized by a dialectic of adaptation and resistance. Attributing an exceptional character to the digital generation ignores this historical regularity and risks diverting discussions on competence, inclusion and access towards oversimplified narratives.

The discourse concerning “digital natives” often projects an artificial image of a generation endowed with innate technological skills, generating a conceptual discontinuity between epochs, as if previous experiences of cultural adaptation to technological change were irrelevant (Prensky, 2001a). In reality, the processes of internalizing technologies still involve learning, cognitive effort, behavioral adjustment and social mediation, regardless of users’ age or historical moment. Therefore, labeling generations based on chronological proximity to digital technology amounts to an uncritical essentialization, which underestimates both interindividual diversity and contextual influences. Consequently, it is essential to analyze the current dynamics in continuity with other technological eras, understanding the digital not as an anthropological exception, but as part of a long-standing trajectory of interaction between culture, tools and formative processes (Hakkarainen et al., 2015).

*Fundamental difference: the acceleration of innovation pace and the shortening of adaptation cycles*

One of the central aspects that compromises the applicability of the “digital native” - “digital immigrant” distinction is the disregard of the accelerated pace of technological changes and the progressive shortening of adaptation cycles. In the current context, the process of familiarization with new digital tools is no longer singular or definitive, but recurrent and increasingly demanding. Adaptation becomes a continuous task, regardless of age or prior experience, as new versions, algorithmic updates, interfaces and usage paradigms constantly transform technological benchmarks. Thus, a person who is currently perceived as “native” due to the mastery of current platforms may become “immigrant” in relation to tomorrow’s emerging technologies. This dynamic highlights the illusory and rigid nature of the labels proposed by Prensky (2001a), which imply a static competence anchored in a historical moment of technological development. In reality, each generation is subjected to the same imperative of continuous learning, in a context in which digital capital is constantly redefined (Gallardo-Echenique et al., 2015).

Moreover, the acceleration of technological innovation leads to a redefinition of the individual's relationship with the digital environment, in which the time available for assimilation decreases, while the complexity of tools increases. This phenomenon puts pressure on all categories of users, generating a generalized skills gap that cannot be explained by belonging to one generation or another. The significance of using technology is not reduced to the mere ability to access digital platforms or operate devices, but involves a deep understanding of the logic that governs these tools and of the way they influence interpersonal relationships. The essential criterion is not the speed with which a person came into contact with the digital environment, but the extent to which they manage to keep their competences updated in a context marked by rapid and continuous transformations. This dynamic of constant adaptation is common to all users, regardless of chronological age, and underlines the contextual nature of technological familiarity. Rather than reflecting a stable generational advantage, digital competence results from a process of continuous learning that involves the willingness to respond to changes and to integrate new tools reflexively. From this perspective, rigid distinctions between presumed generational categories lose their explanatory relevance.

*Accepting the digital not as a marker of a new species, but as a test of the human capacity for cultural adaptation*

The representation of technology users as belonging to distinct digital species, according to age, leads to a dangerous essentialization of technological competences and cognitive capacities. The thesis according to which young people born in a digital environment inherently possess a superior digital intelligence induces the idea of an anthropological rupture between generations, treating the integration of technology as an evolutionary mutation (Prensky, 2001b). Such an approach ignores both the internal variability of any age group and the learned and cultivable nature of digital competences. The capacity to adapt to technological tools is not an innate trait, but the result of the interaction between experience, educational environment and social context (Selwyn, 2009). The relationship between humans and digital technology does not indicate a rupture of an essential nature, but reflects the adaptive capacity characteristic of all forms of culture. The integration of the digital environment can be understood as part of an evolutionary process in which forms of communication and ways of relating to reality are progressively reconfigured, without assuming a

radical discontinuity from previous mechanisms of socialization and learning.

Therefore, it becomes essential to understand digital literacy as a form of continuous social learning, in which individuals from any age category can acquire, refine or even lose competences, depending on their availability and motivation to actively interact with technology. In this sense, the concept of “digital wisdom” proposed by Prensky (2009) offers a more nuanced alternative to the native-immigrant dichotomy, shifting the focus from the chronological origin of the relationship with the digital to the quality of this relationship, expressed through discernment, critical capacity and autonomy in use. As Elaoufy (2023) emphasizes, the differences between generations are not determined by the existence of a natural demarcation line, but by the way in which each individual internalizes and negotiates the meanings associated with technology. This type of framing allows for a pedagogical and psychological approach focused on learning processes, and not on biological belonging, recognizing the dynamic and constructible nature of digital literacy.

*Instead of labels, a relational approach: what, how, how much and why we use*

The use of generic labels such as “digital natives” or “digital immigrants” involves an excessive simplification of extremely nuanced behavioral, cultural and cognitive realities, which cannot be reduced to variables such as year of birth or early exposure to technology. Such a classification ignores the fact that a person’s relationship with digital technologies is shaped by a multitude of contextual factors: level of digital literacy, cognitive style, type of online activities carried out, available social and educational resources, as well as the personal meaning attributed to the use of technology. Therefore, a paradigm shift becomes necessary, from a labelling approach to a relational one, which analyses not what a fixed category entails, but what, how, how much and why each person uses digital environments. This approach allows for a more accurate understanding of the actual diversity of digital experiences and avoids stereotypes that may lead to marginalization or overvaluation. For example, an adult who uses technology for pedagogical, creative or civic purposes may have a significantly higher level of digital adaptation than an adolescent who passively and repetitively consumes content. Such differences are visible in everyday practices and support the idea that the native-immigrant polarization is not relevant for understanding how current digital competences are structured (Selwyn, 2009). Rather than

starting from identity-based assumptions, it is more productive to build interpretative frameworks that include functional and relational variables, capable of capturing the actual dynamic between subject, technology and context.

This relational orientation proposes a reconsideration of digital competence in terms of meaningful, contextualized and self-reflexive use of technological resources, going beyond quantitative evaluations or generalizations based on generations. Thus, the essential questions become: what digital tools are used, for what purposes, with what frequency and in what contexts? These questions provide a more accurate map of contemporary digital realities and enable better-calibrated educational or psychosocial interventions. For example, a person who uses technology to build meaningful social relationships or to engage civically may develop a form of digital competence essentially different from that of a person who uses the same tools for passive entertainment or social validation. This differentiation is crucial in understanding and supporting harmonious development in the digital context. Moreover, such a perspective is also supported by the specialized literature, which proposes the analysis of the digital user through the lens of goals, interactions and their relationship with technology (Pangrazio et al., 2020). In addition, relating to technology in terms of goals and relationships allows for a better understanding of digital dysfunctions or imbalances, which do not depend on generation, but on the quality of the user-technology relationship. Thus, instead of labels that homogenize, the development of a relational grammar of the digital becomes essential, one that reflects the complexity of human adaptation in a dynamic technological environment.

## **Conclusions**

The first essential aspect that emerges from the conducted analysis concerns the problematization of the “digital native” - “digital immigrant” dichotomy as a valid explanatory reference for understanding the educational and social behavior of technology users. The hypothesis of a differentiation between generations based on their biological belonging to the digital age has been deconstructed through the critical examination of the fundamental assumptions that support it, as well as through the highlighting of the numerous theoretical, terminological and epistemological limitations that it entails. Rather than an empirically observable reality, this binarity reflects a convenient narrative framework, often used in educational discourse to explain perceived deficits or high performances based on age, without taking into account the structural, cultural, institutional and cognitive

variables that truly condition the relationship with technology. Therefore, it is necessary to abandon this rigid conceptual framework and adopt approaches that emphasize the complexity and diversity of digital experiences. It is not chronological age that determines technological competence, but the learning trajectories, cognitive styles, exposure opportunities and the ability to critically integrate digital tools into meaningful activities. By dismantling this generic opposition, the possibility arises for a more inclusive educational framework, which no longer operates with simplifying assumptions about the advantage of digital nativism, but rather acknowledges the learning and adaptation potential of each user, regardless of the biological generation to which they belong. This perspective allows for a repositioning of educational actors in a relationship of collaboration, and not of antagonism.

The second fundamental element identified refers to the way in which technological distinctions can generate, in the absence of a nuanced understanding, subtle forms of symbolic exclusion or educational marginalization. When certain users are labelled as “digital natives” solely on the assumption that they were born in a digitized era, without an actual evaluation of their competences, and others are considered a priori as “immigrants” and treated as unadaptable, an artificial polarization of the educational community occurs. Instead of a culture of mutual learning, there arises the risk of a perceptual gap between generations, reinforced not by real differences in technology use, but by the social expectations accompanying these labels. Such a division can negatively affect pedagogical relationships, eroding trust and the capacity for collaboration between teachers and students. In particular, teachers may be perceived as outdated or “inadequate” simply because they do not exhibit the same informal ease in using digital platforms, while students may be overestimated as “digital experts” without this competence being actually demonstrated. From here derives an acute need to reassess the way in which cultural and technological labels are projected into the educational sphere, in order to prevent the emergence of status and authority imbalances. Only through a critical approach to these narratives can the educational system promote a culture of inclusion, based on the validation of real competences and mutual support in the digital learning process.

Thirdly, the analysis has demonstrated that the technological experience is not homogeneous even within the same age cohorts, which implies the need to abandon the idea that the digital generation constitutes a uniform block. Young individuals may exhibit a wide range of orientations towards technology - from innovative enthusiasm to

philosophical reluctance -, and adults may likewise be content creators, sophisticated users or occasional consumers. This plurality of positions invalidates approaches that rigidly associate competence with age and requires the reconsideration of educational strategies in terms of accessibility, adaptability and personalization of digital content. The categories proposed by authors such as Zur, who differentiate users not according to age, but based on their degree of familiarity, engagement and autonomy in relation to technology, offer a more relevant alternative. His model - from “avoider” to “innovator” - reflects much more accurately the actual diversity of digital behaviors and opens the path for educational strategies that respond to individual needs and not to assumptions about generations. This reconceptualization allows for better calibration of educational policies and pedagogical interventions, in the sense that they can be directed towards the development of real competences, in rhythms and formats adapted to each user, rather than imposing a single model based on age-related stereotypes.

Finally, the discursive and theoretical results analyzed suggest that adaptation to digital technology is a process of continuous learning, which involves conscious effort, critical reflection and institutional support. Digital competence is not an attribute acquired once and for all, but a dimension that must be constantly updated according to new technologies, platforms and social contexts. In this framework, the importance of digital literacy cannot be reduced to mere technical skills or to familiarity with interfaces. Rather, it is about the capacity to understand algorithmic logic, ethical implications, the impact on privacy and on the way interpersonal relationships evolve in digitally mediated contexts. Thus, the focus must shift from the idea of belonging to a biologically privileged generation to the recognition of the need for continuous support in developing critical thinking and digital autonomy. This perspective rejects the simplistic narrative of the “digital native” and replaces polarization with a model based on progress, learning and responsibility. Digital education, in this vision, is no longer a privilege of the young or a burden for the elderly, but a shared responsibility of all actors involved in the formation and use of competences relevant for life in a digitalized society.

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