







# Digital emotional intelligence: construction of a model and validation of a measurement instrument

## *Inteligencia emocional digital: construcción de un modelo y validación de un instrumento para su medición*

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### Abstract

This article aims to establish the concept of Digital Emotional Intelligence as a key competency within digital literacy frameworks. It presents both a theoretical model of Digital Emotional Intelligence and an instrument for its assessment. The theoretical framework explores the emotional phenomena experienced on social media platforms, which are characterized by user communication and interaction. Based on a literature review, the methodology outlines the construction of the Digital Emotional Intelligence model, including the definition of its dimensions, sub-dimensions, and the corresponding indicators. From this foundation, an instrument comprising 60 items is developed to measure Digital Emotional Intelligence. This instrument is administered to two pilot groups of university students from the Universidad de Huelva in Spain and the Universidad Popular Autónoma del Estado de Puebla (UPAEP) in Mexico. The instrument is validated through expert judgment and statistical analysis, resulting in a final version consisting of 38 items across 10 dimensions. This research provides a robust conceptualization of Digital Emotional Intelligence and an empirical tool for its evaluation.

**Keywords:** emotions, intelligence, digital, educommunication, model, youths.

### Resumen

Este artículo tiene como objetivo fundamentar el concepto de Inteligencia Emocional Digital como una competencia esencial en los modelos de alfabetización digital. Asimismo, se presenta un modelo teórico de la Inteligencia Emocional Digital y un instrumento para su medición. En el marco teórico se explican los fenómenos emocionales que se viven en las redes sociales, las cuales se distinguen por la comunicación e interacción de los usuarios. Con base en una revisión de literatura, en la metodología se detalla la construcción del modelo de Inteligencia Emocional Digital con la definición de sus dimensiones, subdimensiones y los indicadores que lo integran. A partir de lo anterior, se desarrolla un instrumento para medir la Inteligencia Emocional Digital con 60 ítems que se aplica a dos grupos pilotos de jóvenes universitarios en la Universidad de Huelva, España, y la Universidad Popular Autónoma del Estado de Puebla (UPAEP) en México. El instrumento es validado mediante un juicio de expertos y análisis estadísticos, resultando en una versión final de 38 ítems distribuidos en diez dimensiones. Esta investigación aporta una conceptualización sólida de la Inteligencia Emocional Digital y una herramienta empírica para su evaluación.

**Palabras clave:** emociones, inteligencia, digital, educomunicación, modelo, jóvenes.

## 1. Introduction and state-of-the-art

From 50 years to date, research has been interested in studying emotions, fact known as the «affective turn» of various disciplines interested in studying the emotional aspect (Lara & Domínguez, 2013). Studies on the virtual environment have also demonstrated its impact on emotions. It has been shown that the digital environment modifies the intensity of emotions, the way of manifesting them, as well as their consequences, due to the characteristics of the virtual (Cohen & Myrick, 2023). Now, many researchers have been interested in the impact that these phenomena have on young people and although all the benefits that digital technologies have brought to their lives are clear, concern has also arisen about other negative manifestations that are affecting their well-being. We are indeed experiencing an increase in cyberbullying, states of anxiety, proliferation of fake news, social polarization among young people and some researchers have shown its association with the use of digital platforms (Serrano-Puche, 2021; Twenge et al., 2022). On the other hand, digital literacy scholars have recently included socioemotional competencies as an integral part of their models and the DQ Institute (2019) introduces the concept of Digital Emotional Intelligence (DEI). Knowledge and management of emotions, as well as empathy and management of relationship are essential for personal well-being in different scenarios, such as family, work, academic and social, and we cannot ignore the digital realm, which is already an essential part of our lives. Hence, the importance of emphasizing the development of DEI. This research aims to delve into this emerging concept in the scientific world, and based on the literature review of the most recognized models of Emotional Intelligence it proposes a DEI model. In addition, the model is operationalized in an instrument developed in a self-report questionnaire that allows measuring DEI and generating awareness in young people about their level of development.

All decisions in our lives are full of emotionality (Ferrés, 2014). The great advances in neuroscience have made it possible to understand the impact of emotions in our lives (Romano, 2012). Since the 1990s, the concept of Emotional Intelligence has gained great importance as a key aspect for the success of the person in different areas. It has been

shown that the development of IQ is not enough to be a successful person, but it is necessary to know and manage emotions (Danvila & Sastre, 2010). This statement is also true for the digital environment where emotions play a fundamental role. Our relationship with digital devices also has an emotional connotation (Ellis & Tucker, 2021). The Internet is a space for interaction, bonding and interpersonal relationships, especially for young people, who develop much of their identity through their interactions with the digital world. The virtual environment allows new ways of expressing emotions, and digital mediations detonate emotionality with an intensity and scope different from offline life, due to the characteristics of digitalization: a communication mediated by screens, devoid of corporeality and with its own language (Serrano-Puche, 2016). Benski and Fisher (2014) say that digital environments are sociotechnical systems comprising technical devices, people, behaviors, rules and social contexts. Serrano-Puche (2016) points out that the Internet is an affective technology, which not only gives channel to our emotions, but also shapes and amplifies them. Because of the above, Ellis and Tucker (2021) stress that rather than attending to the technological characteristics of digital platforms or devices, research should focus on the social and psychological processes that underlie them. Cohen and Myrick (2023) argue that technological possibilities shape the way users manifest and regulate their emotions.

In recent years there has been great interest among researchers to address digital phenomena triggered by different emotions, especially those that negatively impact users. Among the phenomena identified is *digital disinhibition*, which occurs where there is a screen mediating our interactions, i.e., the user feels freer to express himself, because he feels there will be less consequences than if he did it face-to-face. Skurka and Nabi (2023) emphasize that in face-to-face interactions we subject ourselves to prevailing social norms of politeness and regulate our nonverbal behavior much more. Crockett (2017) points out that the indignation that an Internet user may feel due to the different content to which he is exposed is amplified and expressed with more intensity, since he does not identify the users with whom he interacts, in addition to the fact that they do not identify him. This disinhibition is more explicit by the *anonymity* offered by the screens, as the user do

not perceive possible consequences of his actions, in addition to feeling less empathy as the user do not recognize his interlocutors. On the other hand, as Palacios Pérez et al. (2022) point out, the Internet makes possible, under anonymity, the opportunity to reinvent oneself, to «disincarnate» and generate an identity of one's own, as Valencia-Ortiz et al. (2023) also point out.

Regarding *the intensity of emotions*, it has been found that the manifestation of emotions tends to be more intense in digital environments. Serrano-Puche (2017) points out that the offline environment presents a more leisurely pace, where emotions are not quantified and are manifested with more quality and less intensity, while in the online environment emotions are transmitted more intensely and are quantified through *likes*, comments and times a content is shared. Emotions also play a role in the *selection of news*, as they are an essential component in the search for and sharing of news. Depending on the emotional state of the user, news of one kind or another is sought (de los Santos & Nabi, 2019) and depending on the emotions they trigger, they are shared or not (Berger, 2014). On the other hand, the algorithm presents content according to our search history and our ideological preferences, which causes us to reinforce our beliefs and increase our rejection of what is different so that we become enclosed in «echo chambers» and «information bubbles». This phenomenon has an impact on social polarization.

On the other hand, social networks allow people's lives to be scrutinized and examined by multiple users, leading to *social comparison*, which often gives rise to jealousy, sadness or envy. *The FoMO (Fear of Missing Out) syndrome* is understood as the fear of missing out, i.e., the fear of being excluded in the fun of peers (Quagliari et al., 2022). This syndrome has been related to an excessive use of social networks, since one wants to be aware all the time of what others are doing. It has also been associated with symptoms such as social isolation, anxiety and depression. The abuse of *apps* has also led to *phubbing*, a phenomenon described as the behavior of ignoring others for using the cell phone (Medina-Morales & Villalón-Hernández, 2023). *Nomophobia* - a term derived from the phrase «*No mobile phobia*» - is the panic of not having a cell phone nearby or losing Internet connection. It is a consequence of the need to be constantly connected. This phenomenon,

in extreme cases, often causes anguish and anxiety. *Anxiety* arises when an uncertain existential threat is perceived.

Studies have established a relationship between social network use and anxiety, but note that there are many factors that mediate between them (Nabi et al., 2023). However, Haidt (2024) has conducted systematic research since 2010 and found a causal relationship between the emergence of smartphones and increased anxiety among young people.

Another phenomenon investigated in the virtual environment is *depression*, which is also mediated by multiple factors. It has been shown that there is a positive relationship, albeit small, between excessive use of social networks and depression (Rains & Tokunaga, 2023), but a cause-effect relationship has not yet been clarified. *Internet addiction* (Martín Critikián and Medina Núñez, 2021) has also been addressed by researchers. However, it has not been included in the Diagnostic and Statistical Manual of Mental Disorders (DSM) due to lack of standardized criteria. However, Young (2004) defines it as «an impulse control disorder that does not involve an intoxicant» (p. 404, cited in Rains and Tokunaga, 2023). There are several features to understand Internet addiction (Valencia-Ortiz et al., 2023). We will mention two: tolerance and abstinence. Tolerance implies that people need more connection time to feel satisfied. Abstinence is the anxiety suffered when not connected to the Internet.

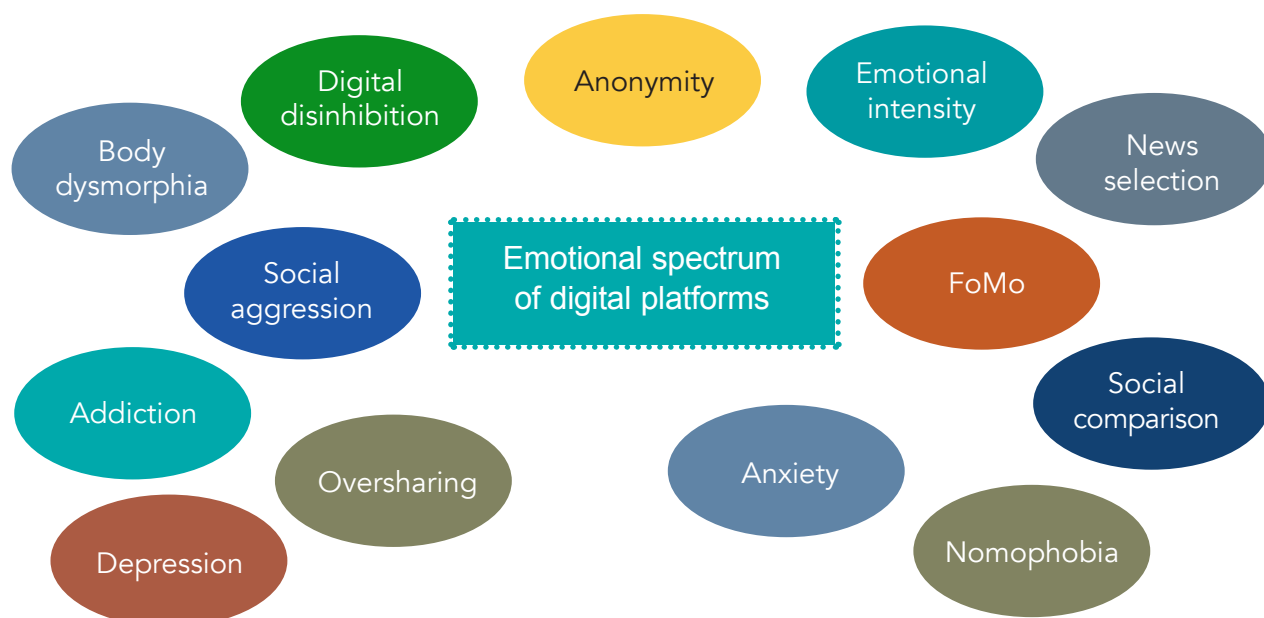
Another problematic use of the Internet is *oversharing*, which refers to excessive information sharing or frequent personal posting (Brammer et al., 2022). In addition to the personal security risk, this tendency can lead to harassment or social rejection. Another maladaptive practice is *poor self-regulation*, which is understood as a state in which awareness of control is diminished (Rains & Tokunaga, 2023). There is little control and boundaries over one's own actions, which generates disorder and failure to achieve goals. Mari et al. (2023) state that emotional dysregulation causes a high risk of developing symptoms of internet addiction. Another disorder studied is *body dysmorphia*, defined as an «obsessive-compulsive fixation on perceived appearance defects» (Rajanala et al., 2018). Young people are constantly exposed to body models that provoke comparison with their body and impact on a decrease in their self-esteem, with the consequent rejection

of their physique. Another aspect that impacts this disorder is the use of filters to modify body appearance in order to generate a better image and social acceptance.

*Online social aggression* is defined as those messages of hostility and hatred towards individuals

or social groups through digital technologies, which gets worse by the speed and reach that it can have, in addition to the conservation of content on the network, which allows the aggression to repeat over time (Fox, 2023). A spectrum of the aforementioned emotions is shown in Figure 1 below.

**Figure 1.** Emotional spectrum of digital platforms



For all these reasons, it is very important that all people can develop the digital skills that will enable them to function fluently and efficiently in these environments, which will also allow them to access many job and learning opportunities. As stated by Barrientos-Báez et al. (2021), the population's access to digital literacy will help build a more just and democratic society. Socioemotional competencies have been incorporated in more recent years into digital literacy models. Silber-Varod et al. (2019) note that from 1990 to date, only 17% of studies conducted on digital literacy competencies incorporate socioemotional competencies. Initially, digital competencies were reduced to the mastery of technological aspects and information management, but now emotional competencies are included as an essential part of these models (Martínez-Bravo et al., 2022; Silber-Varod et al., 2019).

The DQ Institute (2019) is one of the pioneers in naming this socioemotional competence as Digital Emotional Intelligence (DEI), a very novel term that had not been addressed in other research and defines

it as «the ability to recognize, navigate and express emotions in intrapersonal and interpersonal digital interactions». The DQ Institute's (2019) concept of DEI is based on the Emotional Intelligence model proposed by Goleman (2013) which establishes four main dimensions for Emotional Intelligence: emotional self-awareness, emotional self-management, social awareness, and the ability to manage relationships.

## 2. Methodology

### 2.1 Development of a DEI model

In order to elaborate an original DEI model, four of the most renowned models on Emotional Intelligence were analyzed: the ESCI by Daniel Goleman and Richard Boyatzis (Hay Group, 2011), the EQ-i model by Bar-On (Lopez-Zafra et al., 2014), the trait model by Petrides and Furnham (Petrides et al., 2016) and the updated EI-capability model by Mayer and Salovey (Rodrigo-Ruiz et al., 2019).

The next step was to compare the coincidences of the four models and to list all the dimensions proposed by the four models that can be applied to the digital environment, leaving aside those focused on the organizational environment. In this exercise, ten subdimensions were detected, which were grouped into the four major dimensions proposed by

Goleman (2013) (emotional self-awareness, emotional self-management, social awareness and the ability to manage relationships) since it was judged that these four dimensions are the ones that best integrate them, thus leaving a model of four dimensions and ten subdimensions shown in Figure 2.

**Figure 2.** Digital Emotional Intelligence Model of digital platforms

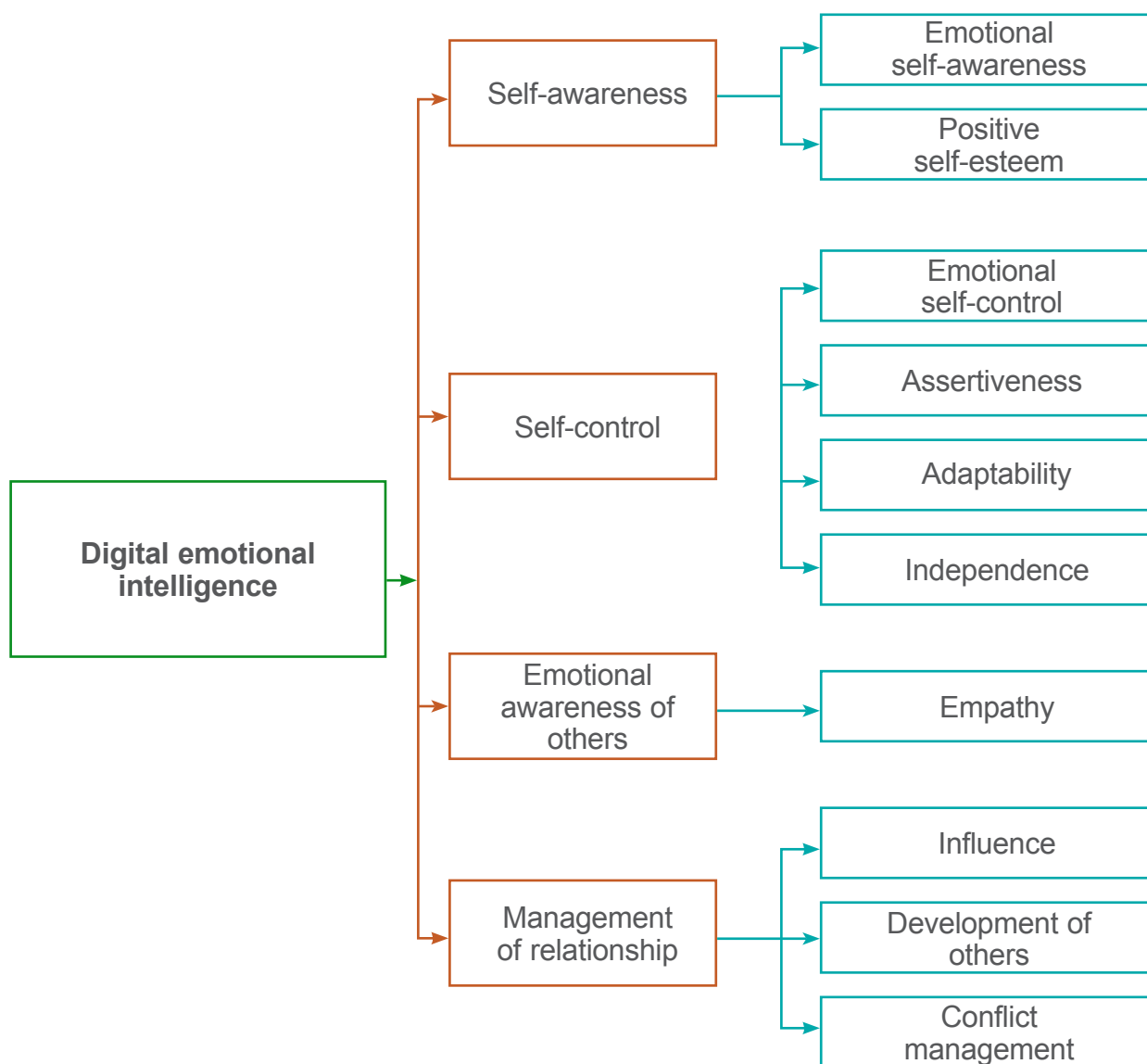


Table 1 shows the operational dimension of each subdimension and the development of its indicators.

**Table 1.** Dimensions, competencies and indicators of the Digital Emotional Intelligence Model

Dimension	Subdimension	Operational Dimension	Indicators
Self-awareness	Emotional self-awareness	Recognition of the emotions produced by digital platforms and the effect they have on personal life.	Is conscious of one's own emotions. Identifies one's own emotions. Is aware of how emotions affects the body.
	Positive self-evaluation (or self-concept for Bar-On)	Realistic and positive self-perception, understanding and acceptance of oneself that is projected with authenticity and confidence on digital platforms.	Accepts his or her own person (physically and in terms of personality). Faithful presentation of oneself. Knows he/she is valued in the environments where he/she operates. Possesses security and confidence.
Self-control	Emotional self-control	Efficient management of emotions produced by digital platforms, keeping in control the negative ones and cultivating the positive ones that contribute to personal well-being and the achievement of objectives. Reflection and content analysis before sharing, commenting or <i>liking</i> . Control of time spent on digital platforms to avoid neglecting personal commitments and relationships. Emotional independence in the use of digital devices and platforms.	Enhances positive emotions and minimizes negative ones. Avoids the impulse to attack. Avoids the impulse to share unverified posts through reflection. Proper use of time on the Internet. Is not emotionally dependent on connectivity, mobile or digital platforms. Controls negative emotions produced by social comparison and positive bias.
	Assertiveness	Ability to express on digital platforms one's feelings, beliefs and/or thoughts in a non-aggressive way, while defending one's own rights and respecting those of others.	Expresses with equanimity and arguments. He/she does not use anonymity to attack. Establishes a different opinion without aggression.
	Adaptability	Flexibility to handle and accept the diversity of positions and people in digital environments and openness to dialogue and adapt ideas in these contexts.	Is comfortable with diversity and difference. Listens and dialogues in the face of different positions. Is aware that different opinions can enrich him/her. Modifies his/her position if given sufficient arguments.
	Independence	Emotional freedom to express thoughts and actions in the digital realm.	Expresses his/her opinion, even if people do not agree with him/her. Does not limit himself/herself by expressing his/her beliefs and opinions. Does not depend on social approval to speak his/her mind.
Emotional awareness of others	Empathy	Ability to understand the feelings of others in digital environments and express understanding and support through digital tools.	Understands and feels the emotions of others. Expresses understanding and support for others. Has compassion for people affected by problems of various kinds. Does not join hate speeches because he/she is able to put himself/herself in the place of the other.

Dimension	Subdimension	Operational Dimension	Indicators
Relationship management	Influence	Ability to exercise leadership and have a positive impact on others through digital platforms.	Has influence in the digital environment in which he/she operates. Is recognized as a digital leader in his/her field. Influences the decision making of his/her followers.
	Development of others (coach and mentor)	Ability to push others in digital environments through support and feedback.	Shows solidarity with the activities of friends and acquaintances. Offers his/her help and knowledge if someone in his/her social networks asks him/her for help. Likes to help not only in the digital environment, but in real life.
	Conflict management	Ability to identify problems, define them, generate alternatives and implement effective solutions in digital communities.	Likes to listen to understand the cause of conflicts. Promotes harmony and dialogue. Proposes solutions that suit everyone.

Once the dimensions and subdimensions of the concept of DEI were established, we worked on its definition, resulting in: Digital Emotional Intelligence is the digital competence that integrates: awareness of the emotions produced by digital platforms and their effect on daily life; the ability to manage them for achieving personal well-being and that of others; the ability to feel and show empathy towards the emotions of others perceived and manifested online; and the ability to build links and leadership in the digital environment, generating more supportive, dialogic and constructive networks.

## 2.2 Development and validation of a DEI measurement instrument

Based on the four dimensions and the ten subdimensions or emotional competencies, a self-report questionnaire was developed with 70 items whose responses offered a Likert scale ranging from *always*, *frequently*, *sometimes*, *rarely* and *never*. In addition, demographic questions were included.

The questionnaire was reviewed by experts, three from Spain and three from Mexico, who made some suggestions for improvement and considered that the ten dimensions derived from the DEI construct were correct and adequately integrated by the four models mentioned. After addressing their comments, the survey was divided into two sections. In the first, they were asked their age, gender, four-month period, grade and population of origin and questions were added about their digital habits through six questions: digital devices they use, type

of connection at home, most frequent connection network in the cell phone, daily connection time, most frequent activities they perform when connecting to the Internet and social networks to which they connect the most. In the second part, the questionnaire was reduced to 60 items.

The questionnaire was developed in *Google Forms* and was projected with a QR on the screens of the classrooms where it was applied to two pilot groups: one at the Faculty of Social Education of the University of Huelva (public university in Andalusia, Spain), with 37 participants and another at the Faculty of Psychology of the UPAEP (private university in Puebla, Mexico) with 32 participants. The questionnaire was anonymous and its objective and the use of the data for academic purposes were explained to the participants. The average age of the participants in both universities was 20.7 years. The participation of women was 79.7 % and 20.3 % of men. The 53.6 % were Spanish students and 46.4 % were Mexican. Regarding the time they reported spending on the Internet, 72.4 % reported spending from 0 to 5 hours and 26 % from 6 hours or more. 1.4% did not answer. As for the social networks they use the most, they first pointed out Instagram, followed by TikTok, YouTube, Twitch, video games and lastly Facebook. The time they spend on the Internet is mainly used for social networks, then to communicate with family and friends, in third place for entertainment, followed by study and learning activities and finally for information. Regarding the digital devices they use, 98.6 % have a cell phone, 93.25 % have a computer, 53.2 % have a tablet, 31.1

% have a digital watch, 37.6 % have a digital console and 2.7 have Smart TV. Once the questionnaires were applied, the *Google Forms* database was downloaded and worked on in Excel to transfer it to SPSS. There, the reliability analysis was performed for each dimension with their respective items.

### 3. Results

The final result of validating the ten subdimensions with Cronbach's Alpha is shown in Table 2.

**Table 2.** Reliability analysis by subdimension

	Cronbach's alpha before	Items deleted	Cronbach's alpha after
Emotional self-awareness	0.553	3	0.754
Positive self-evaluation	0.309	7, 8, 9, 11,12,13	0.693
Emotional Self-Control	0.586	14,15,16,17, 20,22	0.822
Assertiveness	0.226	30, 31,32,33	0.475
Adaptability	0.534	37	0.667
Independence	0.162	38, 41, 42	-0.618
Empathy	0.838		0.838
Influence	0.697	50	0.778
Development of others	0.859		0.859
Conflict management	0.814		0.814

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When discarding the items -suggested by the SPSS program- in each subdimension to obtain a better Cronbach's Alpha, 38 items were finally obtained. All the subdimensions had values above 0.667, except assertiveness (0.308) and independence, which yielded a negative value (-0.618). However, they were maintained because during the expert judgment they were dimensions that were considered valid. Subsequently, a reliability analysis was made of all the questions integrated in each of the four dimensions, leaving Cronbach's Alpha as follows: self-knowledge 0.691, self-management 0.717, awareness of others 0.838 and relationship management 0.852. As seen, the reliability value is good in all four dimensions, especially in the last two, awareness of others and management of relationships, so it is concluded that the questions measure what they are intended to measure. Reliability analysis was again performed, this time integrating the 38 items. The

result for the total Cronbach's Alpha was 0.822. It can be seen that the reliability of the whole instrument is high, after having passed the expert judgment and the statistical tests of Cronbach's Alpha.

As for the results of the survey, the overall average of DEI was 3.19, which can be considered fair. The ranges established to qualify the level of DEI development were as follows: from 1 to 2.4, low; from 2.5 to 3.4, regular; from 3.5 to 5, high. A comparison was also made between gender demographic variables. The average total DEI score for women was 3.20, slightly higher than that of men, who scored 3.17. Likewise, a comparison of DEI by country of origin was made, and Mexican students obtained an average total DEI of 3.22, slightly higher than Spanish students, who scored 3.17. In addition, a comparison was made by dimension and subdimension of both variables, gender and country of origin, which can be seen in Table 3.

**Table 3.** *DEI Comparative by gender and country of origin*

Dimensions	Women	Men	Spain	Mexico	Subdimensions	Women	Men	Spain	Mexico
Self-awareness	3.25	3.32	3.18	3.35	Self-knowledge	3.55	3.79	3.51	3.91
					Positive self-evaluation	3.07	3.16	3.04	3.10
Self-control	2.96	2.99	2.92	3.02	Self-control	3.05	3.10	3.04	3.09
					Assertiveness	2.87	2.92	2.86	2.90
					Adaptability	2.99	2.93	2.90	3.07
					Independence	2.81	2.83	2.71	2.93
Emotional awareness of others	4.35	4.13	4.40	4.19	Empathy	4.35	4.13	4.40	4.19
Management of relationship	3.18	2.95	3.17	3.10	Influence	1.97	1.79	1.86	2.02
					Development of others	3.76	3.33	3.74	3.60
					Conflict management	3.43	3.48		

#### 4. Discussion

The literature review demonstrates the close connection between emotions and technology, the incidence that the virtual world has on the expression and manifestation of emotions, as well as their consequences due to the qualities of the digital world. The literature also reflects the negative and worrying incidence of digital platforms on the well-being of young people. This stage of the research was very valuable to identify digital emotional phenomena and propose a view of them. On the other hand, it is corroborated that the emotional aspect in the development of digital competencies has not been promoted in the same way as other competencies, so the concept of DEI becomes relevant for its substantiation and dissemination.

Regarding the construction of the model, the dimensions chosen to integrate the concept of DEI have a solid theoretical basis, based on the four main models of Emotional Intelligence offered by renowned authors such as Salovey and Mayer, Goleman, Bar-On and Petrides and Furham. In the process of analyzing these models, it was observed that they coincided in several dimensions and sub-dimensions, although they were named differently or grouped differently. It was analyzed which of the proposed dimensions and subdimensions could be applied to the digital domain, and the items used in existing tests for measuring emotional intelligence were also reviewed. Based on this, the most relevant

items were selected, adapting them to the digital context. In addition, during the drafting of the items, emotional manifestations specific to the digital environment were added.

Among the results of the pilot survey applied, it can be observed that the female population has a slightly higher total DEI (3.20) than the male population (3.17). As also shown in the results, men outperform women in the dimension of self-awareness and self-control, while women outperform men in the dimensions of emotional awareness and management of relationship. In four subdimensions - adaptability, empathy, influence and development of others - women show better competence; men, on the other hand, scored better in the following six: self-awareness, positive self-esteem, self-control, assertiveness, independence and conflict management. This coincides with what is established in the literature, such as the studies by Karua and Saini (2020) and Mari et al. (2023), which indicate that emotional intelligence is managed differently according to gender. Another result is that young people show a regular level of DEI development, with a score of 3.19, with potential to enhance it further. When comparing the countries, Mexican students obtained a slightly higher score than Spanish students. It can be observed that Spanish students scored better in the dimensions of emotional awareness of others and management of relationship, while Mexicans performed better in the dimensions of self-awareness and self-control. Mexican students stood out in eight

subdimensions: self-awareness, positive self-esteem, self-control, assertiveness, adaptability, independence, influence and conflict management. On the other hand, Spanish students showed better competence in the subdimensions of empathy and development of others.

Regarding demographic variables, the following differences and similarities were found between the two populations: more than 50 % of Spaniards have a cell phone, computer and tablet, while more than 50 % of Mexicans only have a cell phone and computer. However, Smart watch is more popular in Mexico (40.6 %) than in Spain (21.6 %). Both populations have 100% Wi-Fi connection at home. In terms of time spent online, more than 50% in both countries report spending between 3 and 5 hours online. However, in Spain only 2.7 % report being connected for more than 8 hours, while in Mexico, 9.4 % report being connected for more than 8 hours. Both populations report using networks for the same activities in the same order of importance as mentioned above, and the same phenomenon is repeated in terms of social network use.

One of the main limitations of this research is that the population used for the pilot test was composed only of students from the Faculty of Education at the University of Huelva and the Faculty of Psychology at the UPAEP. Consequently, the results should be interpreted within the framework of the specific characteristics of this sample. Likewise, a predominance of women over men was observed, which limits the generalization of the findings. Therefore, it is recommended that future studies apply the instrument in more diverse populations, adapting it to their particular contexts and sociodemographic conditions.

## 5. Conclusions

The research reaffirms the importance of working on the development of DEI, because as we have seen, the Internet is an affective technology, and the digital environment influences and modifies the transmission of emotions, especially the space of social networks, where young people interact the most as they communicate with their peers, reaffirm their identity and are socially validated. Just as all the benefits of social networks, there are negative signs about their use that demand digital

literacy, especially in the emotional sphere, which is where young people are being affected the most. The concept of DEI is not explicitly developed in the current literature, which makes its dissemination and substantiation relevant, especially in view of the previously mentioned phenomena. This research compiles various theoretical contributions on technology, emotions and emotional intelligence models in order to support the concept of DEI. Likewise, a model of DEI is proposed, detailing its dimensions, subdimensions and indicators, with the aim of generating an instrument that allows its objective measurement, thus moving from theoretical discussion to practical application.

The instrument developed in this research presents a good level of validity and allows us to diagnose the development degree of DEI in young people in its different dimensions. This will contribute to generate a greater awareness in them about the emotions caused by the digital environment, as well as a better understanding and empathy towards the emotions of others. In addition, it will allow them to work on improving their emotional management and interpersonal relationships, which will favor their emotional well-being and the construction of a more dialogic, supportive and open digital environment.

On the other hand, the instrument can be used by education, pedagogy and psychology professionals to learn about the DEI profile of their students and accompany them in their academic and personal development, as well as to provide guidance to parents. It can also be a useful tool in the curricular design of institutions, as it will allow them to effectively address the digital environment in the classroom, with special attention to the emotional component.

For public policy makers, DEI as a competency is central to establish training frameworks in educational institutions that favor the development of this skill. In conclusion, this article contributes to the foundation of the concept of DEI, proposes a model with its components and presents an instrument for its measurement, with potential impact in various areas that promote its development.

## Author contributions

**Ana Cristina Gómez-Vallarta:** conceptualization, data curation, formal analysis, funding acquisition, research, methodology, project management, resources, software, supervision, validation, visualization, writing - original draft, writing - revision and editing.

**Sergio Rivera Magos:** conceptualization, methodology, project management, supervision, validation, visualization, writing - revision and editing.

**Antonio Daniel García-Rojas:** methodology, project management, supervision, validation, writing - revision and editing.

**Ángel Hernando-Gómez:** methodology, validation, writing - revision and editing.

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