

The dimensions of media competence among Spanish university students

Las dimensiones de la competencia mediática en estudiantes universitarios españoles

As dimensões da competência mediática dos estudantes universitários espanhóis

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Abstract

The results of this work form part of the coordinated RD&I project: "Citizens' media competence in relation to emerging digital media: innovative practice and educommunicational strategies in multiple contexts", developed between 2016 and 2019 at 25 Spanish universities. Specifically, the work pertains to the subproject: "Media competence of the citizen with emerging digital media in university settings". Data was collected from university students through questionnaires and focus groups. We sought to understand their self-perceptions regarding their level of media competence in relation to various dimensions, with the aim of extracting key points in order to improve training provided. According to the results obtained, this group largely considered themselves to be media competent; however, this is not coherent with the true perception revealed following inspection of students' self-ratings for each of the six main dimensions of media competence. Only technology appears to be sufficiently covered. A very limited vision of the importance of producing messages in comparison to their diffusion was evidenced; in addition, values were identified pertaining to the identification of ideology and interaction, among other aspects. A lack of assimilation of the aesthetic dimension and environmental implications is also highlighted. The need for media and digital literacy coincides with the vision held by university teachers, and for this reason the need for training is evident. As a result, it is observed that the common failings detected by more general population studies in relation to traditional media and digital education are being repeated in this sphere.

Key Words: *Media competence; Media Literacy; Dimensions; University students; Higher Education, ICT*

Resumen

Los resultados de este trabajo se enmarcan en el proyecto coordinado de I+D+i denominado "Competencias mediáticas de la ciudadanía en medios digitales emergentes: prácticas innovadoras y estrategias educomunicativas en contextos múltiples", desarrollado entre los años 2016 y 2019 en 25 universidades españolas. Concretamente, en el subproyecto "Competencias mediáticas de la ciudadanía en medios digitales emergentes en entornos universitarios". Se han recabado datos en-

tre estudiantes universitarios, a través de cuestionarios y focus groups, para conocer su autopercepción en torno al nivel que poseen en las diversas dimensiones de la competencia mediática, al objeto de extraer claves para la mejora formativa. Según los resultados obtenidos, este colectivo se considera, en su mayoría, competente mediáticamente, algo que no es coherente con la verdadera percepción que demuestra al detallar su autovaloración de cada una de las seis dimensiones principales de la competencia mediática. Tan solo la tecnológica parece suficientemente cubierta, si bien se evidencia una visión muy limitada de la importancia de la producción de mensajes frente a la difusión, así como de la identificación de ideología y los valores o la interacción, entre otros aspectos. Destaca también un bajo grado de asimilación de la dimensión estética y de las implicaciones medioambientales. Esta necesidad de alfabetización mediática y digital coincide con la visión que tiene el profesorado universitario, para el que es evidente esta necesidad formativa. Se reproducen, por tanto, las carencias habituales de la educación mediática tradicional y digital que se han venido detectando en estudios más generales de población.

Palabras clave: *Competencia mediática; Educación Mediática; Dimensiones; Estudiantes universitarios; Educación Superior; TIC*

Resumo

Os resultados deste trabalho fazem parte do projeto coordenado de I+D+i intitulado “Competências mediáticas dos cidadãos em mídias digitais emergentes: práticas inovadoras e estratégias educacionais em múltiplos contextos”, desenvolvido entre 2016 e 2019 em 25 universidades espanholas. Especificamente, no subprojeto “Competências mediáticas dos cidadãos em mídias digitais emergentes em ambientes universitários”. Os dados foram coletados de estudantes universitários, por meio de questionários e grupos focais, para investigar sua autopercepção sobre o nível que possuem nas várias dimensões da competência midiática e seu desenvolvimento em cada uma delas. Conhecer estes dados relativos à competência mediática e à percepção que os alunos têm dela permite-nos extrair chaves para melhorar a formação no futuro. Os resultados pintam um panorama ainda incerto. Das seis principais dimensões da competência mediática, apenas a competência tecnológica parece estar suficientemente coberta, embora os próprios estudantes exijam formação neste

MONOGRAPH

domínio. No resto, as deficiências habituais da educação tradicional para a mídia em ambientes analógicos parecem ser reproduzidas.

Palavras chave: *Competição mediática; Educação mediática; Dimensões; Estudantes universitários; Ensino superior; TIC*

1. Introduction and research question

Media competence is one of the most important interdisciplinary research settings of the many which have been developed from the educommunication perspective in recent decades. At the end of the 20th century, interest focused on the critical capacity of citizens faced with hugely influential phenomena such as image, the television and advertising (Aparici and García Matilla, 1987; Ferrés, 1994a and 1994b; Pérez Tornero, 1994). Nevertheless, since the emergence of media education, access to the facet of production and diffusion has marked it out as heterogeneous and interdisciplinary work (Freire, 1970; Kaplún, 1998; Orozco, 1994). Currently, this creative facet has diversified its attention to focus on specific profiles, as is the case with the group of university students in this work. This includes a focus on their use of mobile devices, but also students' own perceptions of these media devices as tools for teaching and learning. Media education has traditionally focused its research efforts on public schools or citizens in general. The profile of university degree students, particularly those studying education or communication, is hugely important both in relation to the professional training of these groups, and the potential detection of training improvements in higher education. Furthermore, as a transversal content, media competence is of great interest to the overall training process of all university students.

With the consolidation of digital culture and social networks, it has been necessary not only to adapt this critical view to a new context of media convergence (Jenkins, 2008), but also to maintain the need for analysis and understanding of the content being produced. We must also consider what we have been generating on screens (Aparici and García Matilla, 2008), paying particular attention to the way in which reality is represented by the media (Aparici, 2010) and to new media, such as the phenomenon of transmedia (Jenkins, Ford and Green, 2015; Scolari, 2013). A further consideration should be of the growth of gamification, seen from

the educommunication perspective as *ludoliteracy* (Aranda and Martínez, 2013). University students are of special interest as a result of their profile as being mostly young people, but also, more specifically, due to their involvement in the knowledge society.

Both the general population and young people have acquired an active online profile. Citizens are constantly participating in an environment in which dynamics of horizontality and collectivisation are at play with regard to content authorship. This leads them to constantly revise and apply certain theories from the 70s and 80s to the present day. Two such relevant concepts are those of the *EMIREC* (Cloutier, 1975) and *prosumer* (Toffler, 1980). These two terms emphasise immersion in the communication and education process. Ideas related to the *prosumer* concept may have more market-related connotations (Aparici and García Marín, 2018, p. 77). This has called for a critical review of the concept of “multitasking” (Ophir, Nass and Wagner, 2009; Spitzer, 2013; Uncapher et al., 2017; Uncapher and Wagner, 2018).

The potential of technology is also highlighted for promoting and consolidating what been called the “relational factor” (Marta-Lazo and Gabelas Barroso, 2016). This makes “a new individual and collective evolution” possible, within which new communication contexts emerge, in the same way as for education and learning (Marta-Lazo, Gabelas Barroso and Marfil-Carmona, 2018, p. 560). As stated by María Teresa Quiroz, this does not deal with the simple preparation or training of individuals, but with promoting a reflective process for the development of these skills (2008, p. 47).

In this context of transformation, the use of digital technology is a key factor. Thus, the so-called skill in audiovisual communication (Ferrés, 2007) has been adapted to the digital factor. As soon as media competence started to be considered an “unstoppable educational action” (Aguaded, 2012) it began to encapsulate and broaden what was considered to be audiovisual. This has advanced and adjusted the new communication and educommunication setting. Thus, this competence was defined according to 6 different dimensions: language; technology; interaction processes; production and diffusion processes; ideology; values and

MONOGRAPH

aesthetics (Ferrés and Piscitelli, 2012). Each one of these dimensions results from prior exploration within the strictest settings of educommunication adaptation to digital media (Buckingham, 2009; Pérez-Tornero, 2004), and from analysis and comparison with the formal curriculum. This line of work was developed from the field of educational technology (Area, 2008; Pérez-Rodríguez, Aguaded and Monescillo, 2010; Tondeur, Van Braak and Valcke, 2007) during a time when pedagogical language more intensely incorporated the concept of skills (López Herrerías, 2014; Perrenoud, 2004)¹.

An analysis performed by Pérez-Rodríguez and Delgado-Ponce (2012) also evaluated indicators of digital competence. Consolidation of this process of adaptation to the new digital reality has made it possible for this research to be based on the consideration of 6 basic dimensions. Joan Ferrés and Alejandro Piscitelli have made it clear that this conceptual tool should be used flexibly and adapted to each specific educational situation (2012, p. 77), dividing each dimension according to capacity for analysis on the one hand, and capacity for expression on the other.

Analysis of digital competence is an approach that has direct precedent in the results of research applied to the general population, such as Andalusia (Spain) (Aguaded et al., 2011); and to different population segments, such as primary education students (Ramírez García, Sánchez-Carrero, Contreras-Pulido, 2016) or young people in general (Pereira, Fillol and Moura, 2019), with numerous research reports centred on university students (Amador and Amador, 2014; Gisbert and Esteve, 2016). These works highlight training shortcomings and the need to continue developing programmes and actions which target media literacy within each one of these profiles. In this sense, this study adds to this line of work, through its application of a specific profile whose stage of professional development will have enormous social transcendence in the medium and long term, this being the profile made up by university students.

In this sense, it must be specified that no previous research has been conducted with similar characteristics to those specified in this research, including student self-evaluations. Although aspects related to media competence have been analysed in the university educational context, with the validation of evaluation

instruments standing out (García-Ruiz, Duarte and Guerra, 2014; Pérez-Escoda, García-Ruiz and Aguaded-Gómez, 2018). One line of work which relates to the use of technology for new teaching and learning processes led to MOOC (Osuna-Acedo, Marta-Lazo and Frau-Megis, 2018). This is an example of the collaborative potential of e-learning. Furthermore, one investigative approach is demonstrated by a study that was conducted into the digital security of students undertaking education degrees (Gallego-Arrufat, Torres-Hernández and Pessoa, 2019).

Specific concern has been shown regarding the use of mobile devices by university students (Figueras-Maz, Masanet and Ferrés, 2017; Mateus, Aran-Ramspott, and Masanet, 2017), in addition to their use by teachers for teaching purposes (Tyrer, 2019). This forms part of a line of work that has been developed over recent years in the didactic and educational technology setting centred on higher education. It considers the undeniable influence of technology over our time in teaching and learning contexts, and will be addressed specifically in this work through the dimensions of media competence. It is important to specify that in dealing with traditionally transversal content, this work offers an initial perspective of this perception from students themselves. However, it will serve as a starting point for the study of training improvements through the curricular design of university degrees.

2. Methods

The main aim of this work is to explore the presence of media competence in its various dimensions among university students, focusing on self-perception. In other words, it investigates the way in which this group perceives each dimension and the relevance attributed to each one.

To do so, students were directly targeted in two ways. Firstly, a structured questionnaire was created and distributed through a network of university teachers at a number of Spanish universities until a convenience sample of 897 responses was achieved. Secondly, four focus groups were conducted in order to delve deeper into students' perceptions. The focus group technique was chosen instead of discussion groups as the questionnaire was highly specific and this approach enabled moder-

MONOGRAPH

ators to intervene to a greater extent (Ramírez, 2015). Variety and the the random factor ensure the inclusion of a meaningful sample, integrating both qualitative and quantitative tools.

A convenience sample was obtained for the questionnaire with students coming from the 2017/2018 academic year and attending 25 different Spanish universities. Of the 897 responses obtained, 69% were from females and 31% from males. With regard to degrees, 53% were undertaking studies linked to communication (Advertising and Public Relations, Audiovisual Communication and Journalism) and 29% were undertaking education studies (Early Education, Primary and Social Education). The remaining 18% were enrolled on other courses, including Marketing, Administration and Business Management, and Fine Arts. Representation of students from all years of the course was achieved: 35% were in their first year, 22% in their second year, 22% in their third year, and 16% were in their fourth year. The sample was completed by 5% of students undertaking a Master's degree.

With regard to focus groups, those involving Group 1 (hereafter, G1) were completed at the King Juan Carlos University. It included a total of seven students, all male. Four were enrolled on a double honours course in Computer Engineering and Videogame Design and Development, two on a double honours course of Digital Engineering and Computer Engineering, and one undertaking a Computer Engineering degree. Group 2 (G2) focus groups took place at the Pablo de Olavide University in Seville. Six students were involved, four male and two female. Five were undertaking degrees in Social Education and one was a student on the Master's of Education for Development, Social Awareness and Culture of Peace at this university.

Group 3 (G3) focus groups took place at the University of Huelva with five Primary Education degree students, three female and two male. All were undertaking the third year of the course and were aged between 22 and 25 years. Group 4 (G4) focus groups were carried out in Barcelona with a total of 8 students, 7 undertaking various communication degrees and one enrolled in Political Sciences. Of these, three were attending Ramon Llull-Blanquerna University, two studying Communication and one Public Relations, Advertising and Marketing; four were at Pompeu

Fabra University, three studying Advertising and Public Relations, and one Political Sciences; and one student was undertaking Marketing and Digital Communications at the EUNCET Business and Management School, attached with Pompeu Fabra University. Students are referred to anonymously and are specified using the initial E, followed by the participant number for each group.

These results complement the views of teaching innovation coordinators at various Spanish universities who had previously been interviewed, with 155 responses being obtained in total (Figueras-Maz, Ferrés and Mateus, 2018). The fact that interviewed students do not belong to the same universities and degrees, or groups, ensures a heterogeneous sample of different universities and degrees.

3. Results

Firstly, through the results of this research study we report the general questionnaire data, giving an overall view of findings. From this, each dimension of media competence is subsequently developed, synthesising the main self-rated areas expressed by students in the focus groups.

3.1. Self-perception questionnaire responses

Questionnaire responses reveal that students have moderately high self-perceptions of their media competence: 60% of students (540/897) consider themselves to be competent in six dimensions, showing that they perceive themselves as media competent individuals. If we remove one of the dimensions, the percentage of students that considers themselves to be competent, in this case in at least five of the six dimensions, rises to 79% (710/897). Thus, we could consider that almost 8 out of 10 university students, a relatively high proportion, see themselves as being fairly media competent. Only 5 out of 897 individuals consider themselves incompetent in all dimensions, with this representing a minority.

With regard to sex, we can observe that relative balance exists between males and females: 62% of interviewed males consider themselves competent in all dimensions, alongside 59% in the case of females. We find more differences if we con-

MONOGRAPH

sider evaluating students within the obtained sample according to their speciality. Those who consider themselves most competent were Fine Arts students (81% of whom responded to the questionnaire, although they made up a small sample of 21 in total). Those considering themselves least competent were Psychology students, at 45% (also a small sample made up of a total of 33 responses). Differences were also observed between the profiles of students undertaking a Communication degree, where 65% considered themselves competent in all dimensions (256/394), compared with 54% of students studying Education (132/243).

As was reflected in some focus groups, these future teaching professionals are aware that they are preparing themselves for a profession subject to pressure for greater “technologisation”: “children arrive literate, the model for writing must change, the approach has changed, school doesn’t want to see it. It’s not that children don’t read, but they have changed their way of reading and writing” (G3-E2). Furthermore, these students believe that they will be faced with generations who are even more digital than their own: “children are native to technology, they will know more than us, we cannot do one mandatory course a year” (G3-E4). Despite this and despite the increase in specific technology courses within education degrees, these students do not appear to be satisfied with the training they receive in this regard: “digital competence is a work requirement but it doesn’t get taught at the institution” (G3-E2); “it’s not taught, nor is there a course, it’s crucial, but it is secondary at university” (G3-E4); “they don’t teach you as a lecturer to teach using the digital board” (G3-E1).

High self-perceptions are coherent with responses given in regards to participants’ considerations of their general skill/knowledge level when it comes to using ICT: 90% (803/897) reported an advanced (401) or medium level (402). 32 considered themselves to be “experts”, this representing only 4% of responses, compared with 6% (58) who considered themselves “beginners”. 4 individuals selected the “null” option, although they later stated that they demonstrated competence in some dimensions. The following table shows the percentage of students who consider themselves to be competent in each of the studied dimensions, with data presented in descending order.

Dimension	Percentage
Technology	93% (831)
Languages	89% (798)
Interaction processes	89% (794)
Production and diffusion processes	88% (791)
Ideology and values	85% (760)
Aesthetics	83% (748)
All dimensions	60% (540)

Table 1: Percentage of students who consider themselves to be competent in each dimension. Source: Produced by the author.

When examining a generation considered to be “digital natives”, the technology dimension was unanimously the most frequently cited, with 93% considering themselves media competent. The questionnaire presented this dimension in the following way: “I am capable of using technology and navigating different digital settings”.

The “languages” dimensions (“I am capable of analysing and producing content with different codes (sound, audiovisual, transmedia)”), “interaction processes” (“I am capable of critically challenging the content I consume through mobile devices”) and “production and diffusion processes” (“I am able to produce and distribute elements through mobile devices (memes, posts, messages, videos, etc.)”) followed technology on the competence scale.

The dimensions of “ideology and values” (“I am able to create content with certain social values”) and “aesthetics” (“I am able to evaluate and create content with aesthetic quality and creativity through mobile devices”), were a little further away, with 85% and 83% of students, respectively, considering themselves to be competent in this context. The focus groups enabled us to delve a little deeper into this data, developing content according to the order of the corresponding dimensions.

3.2. “Technology” dimension

Focus group participants linked their high self-perceived competence in the technology dimension to two factors. Firstly, they reported being accustomed to using devices and their strong presence in their daily lives: “Technology forms a part of us. It is mandatory. I don’t understand life without technology” (G4-E2). This extended to the point of feeling that “multitasking” was a part of their “generation” (G4-E3).

On the other hand, this high level of self-perceived preparation is technologically linked to the need for their studies and their professional development. This issue received a lot of attention in their responses due to them being groups which had undergone their development within the university setting:

I like technology a lot, I have an iPhone, I have a Mac. I use the computer a lot for my work. I was working for some time in the area of communication and so on. And now, studying makes it much more useful being able to connect it all (G2-E5).

In this career you must master programs such as *InDesign*. You must master them to perfection. There are courses that are all on the computer. I didn’t know at first, but I learned. You can’t go out into the working world without mastering technology to perfection (G4-E1).

A case also exists of those who continued resisting this technological mentality, representing, we can intuit, a minority yet existing trend. An example of this is seen in this statement from an Advertising student:

I am romantic, traditional. I don’t know how to use a Mac [...] I don’t like that they impose a technological mentality on us [...] It makes me want to move away from the screen. Go to the mountains. I feel very incompetent. No, I’m not incompetent. I can do a campaign, but there will come a time when I will feel useless. It doesn’t make me do badly, but it makes me embarrassed. There is a love-hate relationship with technology (G4-E4).

This stream of thought may be losing followers, as expressed by another student:

Before I was also traditional, romantic, but I have adapted to technology. I master everything that I have to master. I consider myself competent. In social networks and everything. What I study guides me a little bit. I am a nostalgic who wants to write scripts, but I will also have to master making a campaign through a social network, a webpage or a transmedia product (G4-E5).

3.3. “Languages” dimension

A large majority (89%) of students showed themselves to be competent in the languages dimension of the questionnaire, understood as the capacity to analyse and produce content with different codes (sound, audiovisual, transmedia). Nevertheless, in the discussion groups it was difficult to achieve greater explanatory detail on this issue. This may be because of the great familiarity they seem to have regarding this theme: “We are so exposed to audiovisual language that we are trained, we have our minds structured” (G1-E5). This factor also entails familiarity with its use: “Today anybody can do things that ten years ago you only saw in the television, even a 7-year-old child” (G1-E1). Though it is still recognised that this ability may be more inclined towards the area of analysis than that of expression: “We’re more able to analyse than to create. Personally, I am better at expressing myself in writing” (G1-E5).

It is notable that, perhaps because of “professional distortion”, students undertaking Education degrees automatically associate this issue with the effect of new codes from the technological world on our written word, ignoring the audiovisual and multidimensional aspect of this dimension:

With regard to language, I try not to cut words short, because I noticed that when I was writing I was misspelling things and I am now correcting this (G2-E5). Incluso reflexionan sobre las consecuencias más profundas que tiene este hecho en este contraste entre la comunicación mediada y la comunicación presencial

MONOGRAPH

Respondents even reflect on the greatest consequence of this with regard to the comparison between media communication and face-to-face communication:

They use emoticons a lot – the little faces – to express feelings. I think that, although they put them in the messages, as we are not speaking directly with them but by mobile they may use them whether they feel that way or not (G2-E6).

They know how to communicate by mobile and not in a public body or in an oral explanation. Social skills are lost, not looking people in the eyes (G3-E2).

However, there are also individuals who see the positive side: “It has benefitted me at the time of taking notes. For example, “para” (“for”) is “xa” (“4”). I have my own codes” (G3-E3).

3.4. “Interaction processes” dimension

The “interaction processes” dimension was presented to participants in the groups as the capacity to critically challenge the content that one consumes through their mobile devices, but also as the capacity to evaluate, select, review and self-evaluate media content itself. The question was addressed regarding whether this issue is directly linked to “technology addiction”. This seemed more directly relevant, being activated in some cases from self-criticism, using irony and humour to make them see that they are hooked on their devices: “I prefer not to think (laughs)” (G1-E2); “I can stop whenever I want (laughs)” (G1-E5). Recognition of this reality of dependence is especially clear in the group formed by engineering students:

You throw days away in games, videos, which you know are rubbish. You are aware of it, but you carry on (G1-E5).

The typical “one more video”, “one more episode”, and finishing at three in the morning (G1-E2)

Such self-evaluations were not only presented by students with the indicated profile, but were also found among Education students:

I get up and I am looking at my mobile (G2-E2).

Everybody has their alarm set on their mobile, from the first minute we already start to see whether we have messages, who has posted or uploaded something. All of this before even getting up, while lying down in bed (G2-E3).

Along with this “impulse to confess”, the usefulness of mobile technologies was also highlighted, without forgetting about self-criticism. This was seen especially when respondents felt that they were reprimanded by their parents or the media regarding their attachment to devices:

It isn't just entertainment... The ease of contacting others, looking things up... When I find myself without my phone I feel anxious, and I think about what I am missing... How do I ask this person about this? I have to look something up in Google, and I am not at home, how do I do it? (G1-E4).

We no longer use a diary, but a web calendar... Road maps, before my parents used to buy them every year, but since *GPS* arrived we no longer buy them (G1-E5).

I always have my computer with me because I have everything there. Besides, now that I am here [in Spain] I am able to contact my mum, my friends in Italy. The computer organises my life. There are applications such as the Calendar or, for example, one about periods that is very important: this is your calendar, from here to here, fertility, from here to here, period (G2-E6).

The idea arose that adults have generated this technological context and, now, respondents blame them for being immersed in it. They themselves call for a rational use of technological devices:

MONOGRAPH

If, for example, parents use the tablet to make their child be quiet, how are we not going to be dependent when we are older? With us they used the television, I don't know why there is so much alarmism. Only the medium has changed (G1-E3).

Some concepts linked to "interaction processes" were highlighted, such as critical capacity. Those who spoke of this seem to have received some type of training in relation to it during their studies and referred, to some extent, to privacy, for instance through the use of social networks in class:

Now I am perhaps being more selective with the topic of information and I find it really difficult to find articles that are useful to me, I read about the authors, and millions of times on the internet they give information that you don't know who it comes from... we are more critical (G2-E5).

Yes, I am quite a lot more critical with the apps and programs above all with Google and Facebook. If I see something on the internet I don't trust it, I don't put up with nonsense, I read the page and decide on the search that interests me (G2-E6).

WhatsApp tells you that people aged under 13 cannot use it, or that's what they say. You tick a box and now you can't use it, but who is ensuring this. It's not fit for purpose (G2-E1).

A lecturer also made a comment about the private life of a student and their relationship. You can't make comments about your private life. We aren't at the same level. There must be boundaries (G1-E2).

Among Education students, concern was also felt towards children's use and the training they received:

Mobile phone use in primary school means that children who are not known on social networks lose confidence, and bullying takes place (G3-E3).

Social networks should not be banned but people should be educated about

their use. It is not only the responsibility of the children but also of the parents. Explain the advantages to them, but also the challenges (G3-E1).

3.5. “Production and diffusion processes” dimension

Although this dimension refers to the capacity to both produce and diffuse media content, and students stated in the questionnaire that they felt competent doing this, debate in the discussion groups was more inclined towards the diffusion context:

Mobiles... having social networks is fundamental, for example to look for a flat, with an image that you upload you can now find flatmates. Diffusion is light and quick (G3-E3).

I recently shared a campaign called “skin colour”, which was carried out a number of years ago. I discovered it a short time ago and searching for ideas I have shared it and it has had 1,020 shares (G3-E4).

Comments stood out in relation to the lack of relevance, and even danger, of content that triumphs online and the power of *influencers*:

Regarding *influencers*, they can be radical and you see danger for some kids who don’t have a formed opinion (Rubius, for example, everything he says is so cool, he can ruin a game because he says it sucks) (G1-E2).

I think it is dangerous how fast they can create and spread fashions; blue whale, for example, a game that was basically ending in suicide. And yes, there is parental control, but then you see it with friends and others (E1-G5).

Furthermore, as mentioned in the previous section, this section finishes alluding to the role of parents and their substitution by other authority figures:

There is so much information that it cannot be controlled... Before we paid more attention to parents. Your parents would say to you, if a friend throws

MONOGRAPH

themselves off a bridge, would you follow them? And now kids don't pay as much attention to their parents, they are the *influencers* or whatever they see on the internet (G1-E6).

3.6. "Ideology and values" dimension

Through these dimensions, the questionnaire showed somewhat lower percentages with regards to self-perceptions of competence, although perception of competence for "ideology and values" was still at 85%. Discussion groups revealed the existence of common aspects in this field, although social networks also emerged:

Many types of media only think about having a greater number of readers or making profits and not about giving appropriate information (G2-E2).

No everybody is aware, sometimes people take it as the whole truth and nothing but the truth; what is said in the media, they say, is the truth. Training is what tells you that this isn't reliable, a newspaper reports the news based on its ideology (G3-E2).

A lot of information comes out on Facebook, when new news comes out they are always very quick. Let's be honest, people soak up more with this media, but I don't know if there is something behind it, for example, they let some messages slip through and others they hide or they don't put up (G2-E6).

Some deeper reflections were directly linked with their experiences in relation to ideological content:

Most of the time, we don't use social networks to see the opinions of others but so that our opinion will be more important. I make my comment so that my comment is seen by the whole world and I have more followers than anybody else. I strive to get attention and stand out above the rest (G2-E1).

I think that social networks have enabled us to have a global ideology and take ownership of it. There must be a reference person, one from the left, one from

the right. Well, what if I agree with aspects of both the right and the left? Am I a weirdo if I don't join either camp? (G2-E1).

3.7. "Aesthetic" dimension

We come to the dimension which unanimously garnered lower perceptions of competence, although the percentage of those considering themselves competent remained at 83% in the questionnaire. Nonetheless, given the comments obtained in the focus groups, it is this self-perception may be doubted. Students contributed highly specific interpretations to this dimension, which was presented as "the capacity to analyse, evaluate and create audiovisual messages from a formal and thematic perspective, and education from an aesthetic sense". Perceptions were linked to content as disparate as achieving "likes" or the aesthetic of the devices themselves. This indicates a degree of difficulty in understanding the very concept of media and digital competence:

The thumbnail of the video, which is designed to be attractive in order to grab attention so that you enter the video, typically of a half-naked woman to draw you in (G1-E2).

Here we talk about aesthetics, but I have never known how to choose between mobile phones (G2-E6).

3.8. Environmental issues

In addition to the six Media Education dimensions reviewed, we considered it interesting to include a further issue due to its social relevance and, specifically, its connection to Media Education. As included in previous works (Tucho, Masanet and Blanco, 2014) we also decided to include environmental evaluations, given the material impact of technology on our environment (Tucho, Vicente-Mariño and García de Madariaga, 2017).

Relevant questions were introduced to discussion groups. As occurred with socio-political implications, the environmental factor does not seem to be at the high-

MONOGRAPH

est level of concern for students with regard to the use of new technologies and mobile applications. Respondents show some knowledge of this issue, in addition to a degree of indifference, with barely elaborated and self-explanatory utterances:

In general, it isn't given importance, because it doesn't affect people directly... you can be made aware, but in the end, you have to buy into it (G1-E1).

People don't think, everybody is aware but we don't think. If only I do it, what difference does it make? (G1-E3).

Mobile phones come from China and we know that their environmental measures are non-existent (G1-E7).

The manufacturers of this technology, why aren't they on top of it? Same with the supermarkets who are now worried about being ecological, why do we not see this in technology companies? (G1-E5).

Utterances can also be found which are somewhat more focused on the link between technology and the environment:

I don't think that it is sustainable. We don't see how it is really done, where the pieces come from, how it is made; it is better to not think about it, but you have to think about it (G2-E5).

It scares me where all of the material goes, given how little time mobile phones last, the screens and the rest... We have them in a drawer for some time, but then you have to throw them out. For example, computers that are completely obsolete after 8 years (G1-E4).

In this way, the collected opinions expressed with greater clarity or diversity of criteria, depending on the case, the stance of university students and their self-perceptions in relation to each one of the dimensions of media competence. Added to this is the factor of responsibility and awareness of the implications connecting technological mediation and the environment.

4. Discussion and conclusions

Analysis of the students' responses provides a panorama which, aside from a few exceptions, points to significant shortcomings in the acquisition of media education, although self-evaluations were generally very positive. While results cannot be extrapolated to the entire university population, the trends revealed are valid for forming hypotheses in future research studies. In this study, it was possible to achieve a positive balance between the integration of quantitative and qualitative methodologies. The study also indicated potential future improvements, both at a sampling level and in the diversity or depth of knowledge creation. In this sense, it is important to keep listening to students and responding to their uncertainties. Comparisons between their perceptions and the impressions of teachers are of great interest, highlighting the value of studying a group of these characteristics due to the social importance and transcendence it will have in the future.

It is important to note, from the outset, the high self-perceptions of media competence shown by students in the questionnaire carried out. However, the focus groups make it evident that some shortcomings exist, including the consolidation of common topics and sites which do not offer the best route to media literacy. Similarly, this research confirms that poor outcomes for media competence were obtained by young people in the first global reference evaluations of media competence among the Spanish population (ITE, 2011). In this way, results are consistent with needs for training processes and a culture of educommunication, in formal and informal learning settings. Such needs have been indicated by research studies referenced when considering the current state of the issue, advancing further self-evaluations of these skills (López Herrerías, 2014). They have also been pointed to in the details of the proposed dimensions which have been broken down (Ferrés and Piscitelli, 2012; Pérez-Rodríguez and Delgado-Ponce, 2012), although here they have been applied to a specific group. Therefore, this research adds to demands for training in relation to media and digital competence, reinforcing training needs regarding this aspect among university students. Such needs have previously been evidenced in general profiles of the youth population (Pereira, Fillol and Moura, 2019), contributing the specific component of self-perception.

MONOGRAPH

Furthermore, conclusions reached by respondents are consistent with those produced through interviews with university degree teachers within the same RD&I research project. In these, the same view of students' media competence was highlighted. In other words, teachers' views coincided with those of our participants in indicating the training needs of students in relation to this issue. Thus, a short-term challenge is established for future research studies. The challenge is to deepen knowledge about profiles associated with Communication or Education degrees, as these degrees are destined to form professionals who will have a mediating role in this aspect. Students of these degrees can, therefore, evaluate the specific improvements required to the university curriculum, correctly adapting the transversal component of relevant content. These adaptations will undoubtedly be applicable to the full range of university degrees available.

The technology competence may be the competence most mastered by students. This quality, with some reservations, could be understood as being second-nature to digital natives who are skilled in the use of mobile technology. Nonetheless, we must not ignore the fact that young people, especially future teachers, demand technological training, considering it a crucial aspect for their professional future. Meanwhile, there is a long way to go in relation to the "languages" dimension. Respondents perceived themselves as competent but, paradoxically, responses to the "language" dimension were mostly associated with verbal questions about the written word (spelling mistakes, syntax, etc.), ignoring other digital language possibilities such as the creation of speech with images, videos, graphics, etc. Nonetheless, the "languages" dimension was seen as important and considered a necessity.

With regard to the "interaction processes" dimension, relevant shortcomings were seen, though slight advances were also hinted at. Students recognised risk situations such as technology dependence or stress resulting from the over-saturation of information. Ideally, both positive and negative factors should be considered, rating the advantageous aspects of these technologies, such as its ubiquity and the feedback it favours, alongside concerning aspects: Infocination, *phubbing*, etc. Nevertheless, dependence stands out as many respondents verify that they "wouldn't be able to live without the mobile phone".

Similar outcomes can be seen in relation to the “production and diffusion processes” dimension. Students appear to be competent when detecting mobile technology risks. Such risks included the imposition of fashions and lifestyles, or the danger of certain *influencers* setting trends. Above all, respondents celebrate the possibility of recording and producing learning processes. Nevertheless, even though they do not conceptualise it in this way in their responses, it should be understood that they are competent with regard to diffusion processes. This is at least shown in its most practical aspect as respondents demonstrate working assiduously in order to receive and diffuse class content, create diffusion groups with colleagues, etc. They questioned where information they received came from to a lesser extent, as well as other possibilities offered by mobile technology, such as connecting universities and disseminating knowledge.

The “ideology and values” dimension seems to have been developed through isolated experiences which are almost always linked to communication related subjects. In other words, in the best of cases, technology use becomes essential for developing critical readings about what the traditional or non-traditional media projects. However, two important handicaps emerge: 1) such use mostly occurs in subjects linked to communication, and 2) ideological derivations or influences on the presence of values within the technology itself are not explained. Nonetheless, the critical sense of *influencers’* evaluations seems to evidence a degree of resistance or awareness raising in relation to manipulation.

According to the data obtained in this research, the “aesthetic” dimension and the environmental issue are practically anecdotally referenced areas within university educational processes. Once again, both are associated with specific curricular content within certain subjects, but there is no underlying concern in relation to working with these dimensions. While the “aesthetic” dimension was analysed from a very limited perspective, the environment is not an aspect that is particularly linked to technology and media competence.

Finally, it is important to note that it is necessary to continue to listen to students in order to continue detecting weaknesses in media competences. In opening up the sampling spectrum to other degree subjects, it is conceivable that

MONOGRAPH

they could be more influential in the overall university panorama. Furthermore, it can be asserted that it is too soon to draw conclusions regarding recently included mobile technology in classrooms. For this, the perspective of time will be needed to understand its value and contribution on and off the university campus. Barely ten years have passed since the emergence and subsequent mass use of the *Smart-phone*. Thus, it is normal that fully developed skills and full internalisation still do not exist. In this sense, it is important to keep researching, developing teaching innovation projects and evaluating innovative dynamics. This should be carried out from the perspective of students who are training to make societal transformations possible.

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Notas

- [1] Questions corresponding to each dimension of media competence are specified in the results section, delving deeper into its meaning.



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