

Article

Professional and Academic Digital Identity Workshop for Higher Education Students

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Abstract: Public virtual profiles arose with the evolution of the web and its related technologies. The individual virtual profiles leave a digital footprint that serves as a showcase of the individual. The analysis and management of what is known as digital identity should be an element to be mastered within the digital competencies of future professionals and current university students. This work describes the research carried out over four years through the Digital Identity Workshop, whose public is higher education students. The research has a double objective; first, to study the student's self-analysis and self-reflection based on his presence on the web; second, to learn strategies for correctly managing his digital identity from the professional and academic point of view. The result has been a success in meeting these objectives after the various editions of the workshop. Pre and post-tests show a significant increase in the students' digital skills in this field of personal branding.

Keywords: education; education and employment; digitalization; higher education



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1. Introduction

In recent years, digitization has gained momentum in all aspects of society; everyday activities have moved online, and aspects of life such as employment and education have a robust digital component [1]. The COVID-19 pandemic has also increased the use of digital resources in those environments [2] and has led to home confinement across the planet and rethinking of the accepted analog reality.

For years now, and specifically in the academic world, this trend toward the use of technologies has been increasingly evident, especially in the Z generation of students who constantly consume applications and have incorporated various devices into their lives [3].

In Web 2.0, specifically through digital social networks, we can work on our image of ourselves, known as digital identity, and control the perception that others have of us [4,5].

Depending on the data they post on the network and their analysis, an individual has different types of digital identity [6], and this will be reflected in different profiles [1]. Much of this data on individuals is entirely public, and its use will be important for adequately managing digital identity. From this point, it is possible to focus on the most dangerous and potentially harmful part of this data and work on aspects such as digital security. Another focus can be to see the advantages of giving visibility to the individual's professional information as a task of digital identity management [7], also known as personal branding.

The main problem with this generalization of the use of technologies is the false sense of knowing that the current generations of students have about it, who master the technical part but lack a critical analysis when applying it. They do not have deep knowledge, as shown in their results, which indicate that "the mere exposure, use, and coexistence with the media and technology, does not imply the development of digital competence" [8]. Universities are a perfect environment to work on 21st-century skills, among which digital competence stands out [9,10].

In order to address the lack of university students' knowledge of digital identity and its management at a professional level as a critical element for them as future digitally competent citizens, a digital identity workshop was designed and offered over four editions.

Specifically, the workshop has two main objectives: to show students the importance of their digital identity, to make them aware of what information they are publishing, and to show them the professional possibilities offered by their networks. Secondly, to work on managing the student's digital identity from a professional point of view.

This research aims to check the effectiveness of and validate the workshop as a whole, and specifically a self-reflection tool developed for the student to become aware of what their digital footprint was like when they started the workshop. To this end, pre-test and post-test surveys were carried out in each edition to determine the degree of assimilation of concepts throughout the different editions. This article will work on three main hypotheses:

H1. *The students, using the self-reflection tool, have achieved the first objective of detecting their current digital identity's influence on their professional life.*

H2. *The students, after the workshop, have achieved the second objective of improving their perception of their digital identity management.*

H3. *The students' level of use and degree of participation influences the achievement of the stated objectives.*

The following section gives an overview of digital competence, digital identity, and a specific tool to work on digital identity management. The methodology section shows the workshop's design and the research to evaluate it, including the context in which it was framed, showing the results in the section with that name. The article ends with two sections that analyze the results through a preliminary discussion and end with the conclusions drawn from the research.

2. Theoretical Framework

2.1. Digital Skills

The citizen's digital competence is one of the eight key competencies for lifelong learning defined by the European Union. It can be defined as "The confidence, critical and creative use of ICT to achieve goals related to work, employability, learning, leisure, inclusion and/or participation in society" [11]. Carretero et al. developed a specific framework to serve as a conceptual model for the citizen, helping with its understanding. The latest and most updated version is DigComp 2.1 [12], organized into five competence areas, i.e., Information and data literacy, Communication and collaboration, Digital content creation, and Security and Problem solving.

Current university students belong to a generation known as Z, born after 1995 and characterized by a strong impact of technologies in their daily lives from birth [13]. For them, mobile phones, social networks, and instant messaging services are just another part of their lives, and they use them daily as the usual means of communicating with others and through which they even learn [14,15]. It is common to associate Generation Z with the controversial "digital natives" category. They know how to use technology but not critically and intelligently, especially in education [1,16]. In this field, they should acquire the necessary skills for their future as professionals in an increasingly digital society [10,17].

2.2. Digital Identity

Identity, without the adjective digital, refers to the set of characteristics of a person that differentiate him or her from other people [1]; identity also requires social interaction, so it is also constructed from social practice [3,18]. Today, people spend more and more time connected to the Internet, which generates more and more content. Thus, transferring the identity concept to the digital environment, we can speak of digital identity, defined by Castañeda and Camacho [19] as "a digital representation of a set of claims made by one digital subject about itself or another digital subject".

In DigComp 2.1 [12], within the Communication and Collaboration area, the specific competence “Digital Identity Management” registers eight knowledge and application levels. It simply identifies what digital identity management is and recognizes data produced to generate it, to propose advanced solutions, for example, to manage a company’s digital reputation. There are authors [20] who include digital identity as one of the 8 interconnected areas of the recent concept of “Digital Intelligence”, understanding it as another component of intelligence and framed in the current digital era.

Georges [6] proposes a model in which he divides digital identity into three types that are constituted from user data on the Internet. Firstly, there is the “declared” identity, which is made up of the information that the individual shares, for example, personal, banking, and health-related data. Secondly, the “acting” identity reflects their actions, e.g., posting content or interacting with others. Finally, there is the “calculated” identity, which results from analyzing the data or actions the person performs using computer systems. It can be seen in this model that there are different types of data and that they will be more or less sensitive to share with third parties.

Based on the type of data, its degree of privacy, and who the recipient is (individuals, companies, institutions, etc.), different profiles associated with the person’s digital identity will be detected [1]. Some examples of data and their constituted profiles will be, for example, profiles linked to the state administration, with which personal data will be shared (address, social security numbers or identifiers of the individual, mobile phone, taxes, etc.). Other private profiles may be related to organisations such as banks or shops; in this case, the data will be the transactions themselves, such as the contracting of savings products, credit cards, payments, personal address for the delivery of products, and purchase history. Finally, and with great weight, public information related to the acting identity will be publications that the individual makes through social networks, blogs, forums, etc. These activities will show much information to third parties, building an essential part of their digital identity.

The university is a perfect place to raise awareness and work on digital competencies from a more general point of view [10] and specifically on digital identity [9], where future professionals will have to have a solid and well-managed digital footprint. Some initiatives have tried integrating and developing a digital identity in their university programs as a vital student skill [3,7,21].

2.3. Digital Identity Canvas

A business model canvas by Osterwalder and Pigneur [22] is an interactive tool based on nine critical pieces distributed along a canvas divided into nine parts, whose purpose is to unify the different criteria that should be considered when implementing a project. In each of the nine divisions, the following information will be indicated: key customers, essential resources, value proposition, customer relationship, customer segmentation, sales channels, cost structure, and source of income. It describes a project effortlessly and visually, allowing it to evaluate and change the associated business models quickly.

Within the field of training in digital identity management, there is an initiative developed by González [23] based on the Business model canvas. It adapts the approach of each of the nine divisions to serve as a tool for designing the digital identity, also known as the “personal brand,” of an individual based on reflection. Figure 1 shows the proposal with the following divisions: brand partners, activities, content, brand definition, relationship with the community, tools, community, investment, and benefits.

DIGITAL IDENTITY CANVAS



NAME
DATE
OBJECTIVES

www.dianagonzalezgonzalez.com | @dianagonzalez
www.edentity.es | @edentity_es

Digital identity canvas by Diana González (@dianagonzalez) is licensed under a Creative Commons Reconocimiento-CompartirIgual 4.0 Internacional License

<p> BRAND COLLABORATORS</p> <p>Other community, corporate or personal brands to collaborate with to achieve the objectives set (suppliers, distributors, colleagues or friends, previous companies...). They are also part of the community and it is necessary to think about the relationship with them.</p>	<p> ACTIVITIES</p> <p>Actions to carry out with each tool to relate with the community. What accounts do you need to create? Will you monitor? Do you need training? Will you write content? Will you attend events? Will you update social media every day? Will you create a content plan?...</p>	<p> DEFINITION OF BRAND</p> <p>Description of the brand based on differential value. Who are you? What do you do? What do you offer? What do you want to do? What make you unique?...</p>	<p> RELATIONSHIP WITH THE COMMUNITY</p> <p>Specify the way in which the community will be reached. Will you communicate in a personal manner or anonymously? One by one, several or all at the same time? Privately or publicly? With what tone?</p>	<p> COMMUNITY</p> <p>Description of the audiences that the brand has a relationship with or may have in the future (internal, external, potential, clients, influencers, bloggers, prescribers, competition, administration...). Who are they? What do they do? How do they communicate? Where are they?...</p>
<p> INVESTMENT. Costs of the digital identity plan, both economic and temporary or personal</p>	<p> CONTENT</p> <p>Topics and types of content offered to the community in each tool.</p>	<p> BENEFITS. Profits obtained from carrying out the activities. Quantification of the objectives set out and new benefits not identified by them</p>	<p> TOOLS</p> <p>Applications, social media or devices necessary to relate with the community. Where is the community? What channels do you use? Which can you use?...</p>	

Figure 1. Personal identity canvas [23].

3. Methodology

The results should be presented clearly and concisely, highlighting the most important observations, describing, without making value judgments, the materials and methods used, as well as the most relevant results of the research.

The Universidad Politécnica de Madrid has a long tradition in engineering with 52 degrees and eight double degrees (telecommunications, aeronautics, industrial, civil, architecture, and computer science, among others), two degrees in sports science, and 1 in fashion design. Since 2017, all its undergraduate students have implemented a digital identity workshop annually. This workshop resulted from an experimental seminar carried out in 2016 as part of a Project Management subject in the fourth year of the bachelor’s degree at the School of Telecommunications Engineering and Systems.

This longitudinal study covers four editions, and Table 1 summarizes it.

Table 1. List of workshop editions and students. Own elaboration.

Edition	Year	Student Data		
		Enrolled	Attendees	Certificates
1st	2017	87	61	57
2nd	2018	89	61	55
3rd	2019	80	49	45
4th	2020	80	51	48

This workshop arises as a response to the need detected in training university students who live on the Internet but do not always know how to use it responsibly and intelligently. It focuses on information that others can see within professional profiles, which will help to

forge a professional opinion about the owner of this digital identity through two identified objectives. Firstly, to make students aware of the importance of their presence on the web as a space for professional opportunities and how it can influence their future careers. Secondly, to provide them with strategies and tools to manage their digital identity, promote their academic activity through social networks and foster a professional digital footprint.

The workshop consists of a 4-h face-to-face session organized into two parts that coincide with the two main objectives. The first part is dedicated to analyzing digital identity and focuses on the student’s self-reflection on how their digital footprint looks. The second part focuses on the management of a professional digital identity. It offers a series of critical points that the student should consider when designing their online strategy, tools that can be used, such as blogs, personal websites, and social networks, and specific tips for designing a good profile on the professional network LinkedIn.

After the classroom session, the student will have 15 days to complete a series of assessment activities.

3.1. Tools for Face-to-Face Workshop

Throughout the workshop, different dynamics are generated to involve the students in the workshop. Firstly, based on the students’ suggestions, we propose the creation of a mind map that tries to simulate the footprint that a person can leave on the web through participation in different spaces, including social networks, blogs, wikis, and news websites, among others. Then we propose that the student carry out different searches in an internet search engine with their name, reflecting on the results obtained in the workshop through the Kahoot! Platform.

Throughout the session, a projected presentation is used, which includes the study materials in the set of slides for students to consult [21]. These slides, published as open educational resources, provide the information needed to carry out and replicate the workshop in any other context or educational level and institution.

Canvas Analysis of Digital Identity

The next activity proposed to the student is to fill in the Author [21] canvas model, based on the Digital Identity Canvas [23], during the face-to-face session. It is a self-reflection tool comprised of 5 fields (Figure 2). Its purpose is to review the student’s current situation, specifically his or her footprint on the web, which will address the workshop’s first objective, related to the importance of analyzing digital identity. This way, once the workshop participants have analyzed their web presence, it will serve as a starting point to provide guidelines for managing a correct professional digital identity.

Analysis of digital identity

NAME AND SURNAME _____ DATE _____

ACTIVITY	COMMUNITY	PRIVACY
	FOCUS	COMMUNICATION

Figure 2. Canvas analysis of digital identity [21].

The following is a brief explanation of each of the fields on the canvas:

- Activity, a space to include a list of the student's daily activities that leave a digital footprint, indicating the platform or service used in brackets. This field detects appropriate and positive behaviors and other negative ones when working on a suitable professional digital identity.
- Community refers to the relationship of people, groups, organizations, etc. with whom the student interacts; generally, student publications address them. The aim is to detect one or more identities that are expressed, i.e., personal identity or professional identity.
- Focus. In this field, each of the identities detected will be associated with the digital social networks used to communicate and interact with these members. In this field, the student detects which networks and strategies they use for their interaction with different communities; they can use the same social network for all of them or, in other cases, duplicate networks, one for each digital identity detected.
- Privacy, based on the social networks detected in the previous field, will be listed here, indicating the degree of privacy (public, private or other). This field is vital to reflect on the exposure of the student's private life and the visibility of the professional one.
- Communication, the last field, aims to study the description and formats of communication, indicating whether it is formal or informal; detecting the times of day when it takes place; the language or languages used; and whether the audience is from the same area (national) or international.

3.2. Assessment Activities

In order for the student to obtain the certificate of completion of the workshop and attend the workshop in person, they must pass two assessment activities which they will carry out remotely on the University's Moodle platform.

These activities consist of creating an abstract for the "About" section on LinkedIn and, secondly, designing, based on the Digital Identity Canvas [23], a personal plan using the strategies and tools seen during the workshop. In addition to submitting the completed canvas, each student must evaluate two other classmates' plans following a rubric proposed by the teaching staff and accessible from the Moodle platform, where all the activities are delivered.

3.3. Research Design

For the research, we used the online questionnaire developed by Nuñez and WS [24], which consists of 20 closed questions. The first five questions are "Yes-No" type, and their objectives are to find out about the student's activity on digital social networks and other web platforms. The student's activity includes the university's educational platforms. Use of other digital networks and platforms is identified using 15 other Likert-type questions with five levels. They relate to the reflection of the student's digital identity, the student's perception of their presence on the web in the form of a digital CV as an advantage when it comes to being hired, and the degree of interest in actively managing their professional digital identity.

The same questionnaire is used for each workshop edition, and students will complete it twice. Firstly, as a pre-test, it is sent to them to fill in before attending the workshop. Then students are asked to fill it in again (post-test) after finishing the workshop session and the evaluation activities that they will have to carry out at home in order to complete the course entirely.

The questions are classified according to the two fundamental objectives of the workshop (Table 2), which we want to work on, and which will serve as an indicator of the workshop's success.

Table 2. Relationship between objectives and questions in the questionnaire. Prepared by the authors.

	Questions
Objective 1. Influence of Digital Identity	My activity on social networks conditions the image that others have of me.
	My activity on social networks will influence my future professional development.
	It is favorable that my academic work throughout my degree is observed by companies in the sector that may hire me.
	I think companies in my sector will prefer to hire people with strong digital CVs.
Objective 2. Digital Identity Management	I would be willing to post my slides, notes, presentations, . . . on platforms such as SlideShare or YouTube.
	I would be willing to have a “Group” on my Facebook account only dedicated to academic matters that would be parallel to my social profile.
	I would be interested in creating and managing a blog where I could share all kinds of academic and professional information.

In order to characterize the sample, we grouped the questions relating to the workshop participants’ activity and type of Internet activity. The questions were classified into two levels according to the degree of use and divided into students who do not produce content and those who do. Specifically, the questions “I have my blog, or I regularly collaborate in other people’s blogs” and “I upload videos to open platforms, such as YouTube, Vimeo” were used as a pre-test and were compared with the questions associated with both objectives (Table 2), using the students’ answers after the workshops as a post-test:

- Level 1 (Do not produce content): those participants who answer negatively to questions 3 and 5 in the pre-test, i.e., those who state that they do not have their blog or collaborate assiduously with blogs of others and do not upload videos to open platforms, such as Youtube, and Vimeo.
- Level 2 (Produce content): Those who, before the workshop, either have their blog or regularly collaborate on other people’s blogs or upload videos to open platforms such as Youtube and Vimeo.

A statistical study to analyze the questionnaire data was carried out using the R programming environment [25] and, in particular, the R-Likert library [26]. Both graphical and inferential methods of analysis were used.

4. Results

4.1. General Vision

Throughout four years of research on the effectiveness of the digital identity workshop, 209 students answered the questionnaires out of the 222 who attended. From the 20 questions asked, we looked for significant differences between the two questionnaires (pre-test and post-test). The difference between the two answers was calculated for each person who answered the two questionnaires.

A first approximation and a general analysis show that, in the first five questions related to web activity (yes/no questions), there do not seem to be significant differences between the pre-test and the final survey. Thus, in yes/no questions (1–5), the percentage of students who have not changed their opinion before and after the course is 93%, 77%, 91%, 79%, and 90%, respectively, all of them high percentages.

Regarding the rest of the questions (6–20), in 11 out of the 15 questions (73%), more than 40% of the students showed a positive change in their assessment of different issues raised, thanks to the workshop. In particular, questions such as “In my university activities, my digital image in social networks should be taken into account” and “I think that companies in the sector will prefer to hire people with an extensive digital CV” stand out from more than 60%. Moreover, only 2 of the 15 questions (13%) show negative change, i.e., a decrease in some of the values expressed by more than 40% of respondents: “If I can access my colleagues’ past and current work (notes, presentations, . . .) and they can access

mine, it will improve my academic activity” and “I would be interested in creating and managing a blog where I could share all kinds of academic and professional information”.

4.2. Results of the Workshop Objectives (H1 and H2)

Whether a parametric or non-parametric test should be used to analyze the questionnaire data has been controversial. Many authors argue that a non-parametric test should be used for these discrete ordinal variables. However, other authors argue that parametric tests are more robust and could also be used for Likert data under some assumptions, such as that normality assumptions are not violated; see, for example, Sullivan and Artino [27].

Plots (Q-Q plots) and two normality tests (Kolmogorov–Smirnov and Shapiro–Wilk’s W) were obtained and analyzed. The 20 questions of the questionnaire were tested for normality. Thus, we can conclude that the non-parametric Mann–Whitney test might be more appropriate in this case to test for significant differences between the pre-test and post-test for each of the 20 questions of the questionnaire.

After applying the Mann–Whitney test, only 5 of the 20 questions turned out not to be significant (p -values > 0.05), allowing us to conclude that, in general, there is a notable difference between the answers before and after the course.

Turning to the first two hypotheses of this research work related to the two main objectives of the workshop, Figures 3 and 4 show the results associated with the questions related to each objective (Table 2), i.e., the difference between the pre-test and post-test.

I think companies in my sector will prefer to hire people with strong digital CVs.
 It is favorable that my academic work throughout my degree is observed by companies in the sector that may hire me.
 My activity on social networks will influence my future professional development.

My activity on social networks conditions the image that others have of me.

I think companies in my sector will prefer to hire people with strong digital CVs.
 It is favorable that my academic work throughout my degree is observed by companies in the sector that may hire me.
 My activity on social networks will influence my future professional development.

My activity on social networks conditions the image that others have of me.

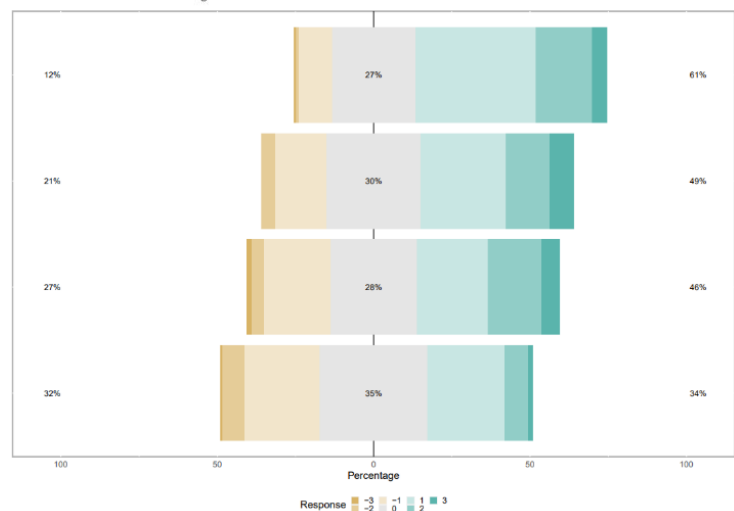
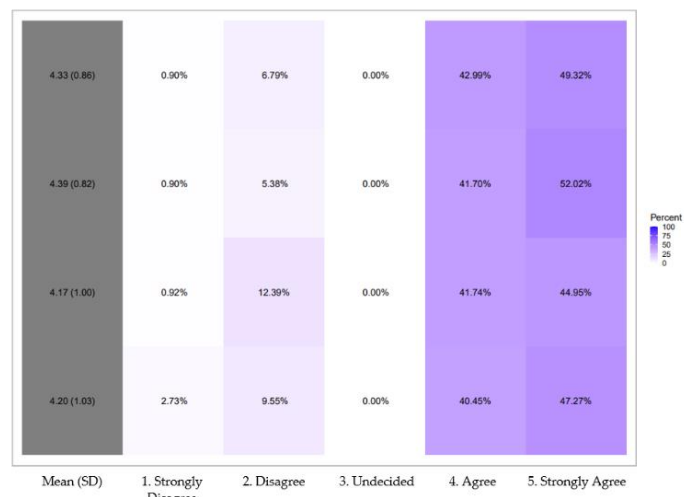


Figure 3. First objective: post-test (top) and differences between pre-test and post-test (bottom). Own elaboration.

I would be interested in creating and managing a blog where I could share all kinds of academic and professional information.

I would be willing to post my slides, notes, presentations, ... on platforms such as SlideShare or YouTube.

I would be willing to have a "Group" on my Facebook account only dedicated to academic matters that would be parallel to my social profile.

I would be interested in creating and managing a blog where I could share all kinds of academic and professional information.

I would be willing to post my slides, notes, presentations, ... on platforms such as SlideShare or YouTube.

I would be willing to have a "Group" on my Facebook account only dedicated to academic matters that would be parallel to my social profile.

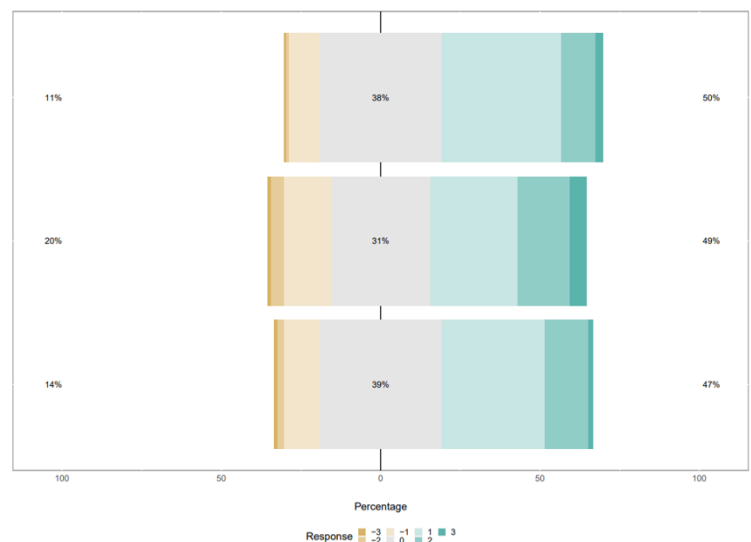
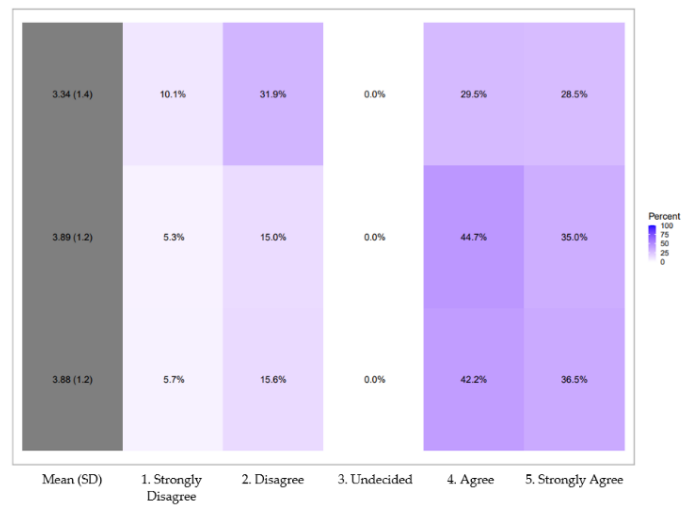


Figure 4. Second objective: post-test (top) and differences between pre-test and post-test (bottom). Own elaboration.

Figures 3 and 4 show, for each question linked to the workshop objectives, the mean and standard deviation of the results of all students' answers to the final questionnaire (post-test, top), as well as the percentages for each of the 5 Likert levels. The graph on the right shows the differences in results between the pre-test and post-test for each question.

We can affirm that hypotheses H1 and H2 are fulfilled and, therefore, the objectives of this workshop are met, validating its results and the tools used in it, such as the Canvas for digital identity analysis.

4.3. Results by Participation Level

The third hypothesis (H3) is to analyze the relationship between the two main objectives and the student's level of participation on the website to observe whether there are differences when assessing the workshop's impact on the students. Thus, the questions were organized into two levels, as Section 3.3 exposes. As a result, Figure 5 shows the difference between the pre-test and post-test for the two levels mentioned.

Objective 1

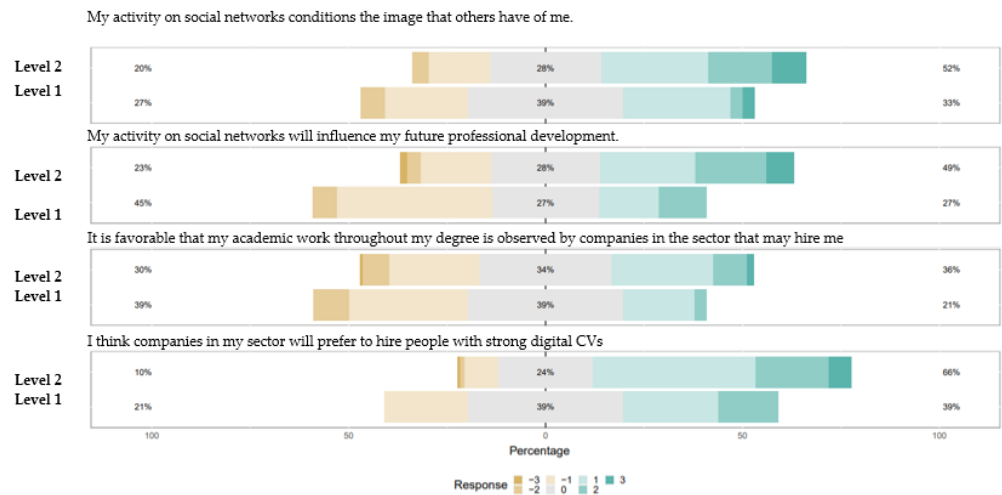


Figure 5. Differences according to levels of participation between pre-test and post-test for objectives 1 (top) and 2 (bottom). Own elaboration.

It is interesting to note how the workshop’s impact is notably more remarkable for objective one than for objective two. The responses associated with objective 1 (Figure 5 top graph) show significant results, with a greater increase in the difference between the pre and post-test responses of level 1 participants compared to level 2 participants. Meanwhile, there are no significant differences between the participants of the two levels mentioned (p -values > 0.05 in all cases).

5. Discussion

The exponential growth in the number of users on social networking platforms and their participation generates a digital footprint that directly affects their digital identity. Therefore, their self-image is affected [28], and this has been especially pronounced since the various confinements due to COVID-19. Most university students belong to this user group and correspond to a so-called Z generation, formerly known as digital natives, who are often assumed to be more digitally literate than they are [5].

This study aims to validate a workshop on digital identity for undergraduate students based on its two main objectives. Both objectives are critical, as it is essential to become aware of one’s own digital identity, to know its strengths and weaknesses, and, on the other hand, to understand and learn how to build it properly and manage it [3,29]. Becoming aware of one’s digital identity requires developing appropriate digital competencies and taking advantage of the potential of digital social networks from a professional and academic point of view [28,30]. For this purpose, proposals have been put forward within the university environment to develop digital literacy but usually focused on the direct application in subjects [30,31] or on learning about the functioning of the software that the centers make available to students [10]. Few initiatives in the scientific literature show the results of undergraduate workshops. Description are often limited to theoretical approaches to what content should be worked on [7], presentations of doctoral workshops [32], or some application, but mainly in postgraduate studies [3] and without many participants in the study.

The questions of the questionnaires (pre-test and post-test) categorized in the first level, carried out over four years in the Digital Identity Workshop, have been analyzed. These questions are focused on the characterization of the students’ Internet activity. We deduce that there is no variation between the two questionnaires’ responses. This result is expected, given the short interval between the two questionnaires, as going from not producing to creating content on the web requires time to learn about the technologies and to plan content, types, and strategies.

Then, we analyzed the answers to the second-level questions. A priori, the results clearly show a positive difference before and after the workshop. In the following, a more exhaustive analysis will be carried out from the point of view of the hypotheses put forward and the workshop's objectives.

Regarding the first objective of the workshop (H1), which focuses on self-reflection on the student's digital identity and aims to make them aware of its importance, there is a general increase in the opinion of the students. The analysis shows a positive difference in their position before and after the workshop (Figure 3, bottom). In a more detailed analysis, a large majority are "quite in agreement" at the end of the workshop with the importance of their digital footprint on the Internet (Figure 3 top). Based on four questions, this objective is in line with the need to become aware of digital identity [3,7,9,19]. The good results confirm the usefulness of the proposed self-assessment tool "Digital Identity Analysis Canvas".

As for managing digital identity, an aspect worked on through objective 2 (H2), in its three questions, there is a significant increase in the difference between pre-test and post-test (Figure 4).

More than 50% of the students would agree with sharing their content on platforms such as Slideshare or YouTube and using spaces such as groups to talk about professional issues. The three issues on which this second objective focuses are recurrently found in the scientific literature addressing the importance of digital identity management [1,5,7,33] and reinforce its necessity. The question related to creating a professional blog is the one with the lowest acceptance, given the difficulty in managing and creating content that they consider relevant.

Finally, there are different attitudes to the Internet, with more active users and content producers and others who browse but do not create. The third hypothesis analyzes if there is an influence on the achievement of the two workshop objectives according to two levels of participation on the web, i.e., associated with students who do not produce content (level 1) and students who do produce content (level 2). Reviewing the results by levels of student participation (Figure 5), those students who did not produce content before the workshop, after passing through it, show an increase in their perception of the influence that digital identity can have, with the differences being minor in the group of content producers. The latter group is more aware of this influence and already has this advantage, and this objective has been assimilated first. The question "My activity on social networks will influence my future professional development" stands out. In contrast, the level 2 participants, content producers, with 45%, have changed towards a more hostile stance. However, to a lesser extent, the question "It is positive for me that my academic work throughout my degree can be observed by companies in the sector that can hire me" has a negative variation of 39% in the group of content producers.

Numerous studies [4,5,7,33] stress the need for a trend towards what, in this research, has been called level 2, which is essential for proper digital identity management.

6. Conclusions

Digital identity, especially from a personal or professional branding point of view for university students, is an aspect that should be addressed through workshops or even transversally throughout students' academic life. It should also be an aspect to be introduced at pre-university levels to instill an awareness of the importance of proper management of one's online footprint and its future consequences.

This paper analyses a workshop on digital identity carried out over four editions and aims, on the one hand, to raise awareness of the importance of students' digital identity through a self-reflection tool, "Canvas of analysis of digital identity," developed by the teaching team itself. Furthermore, it offers guidelines for appropriately managing this digital identity.

The result of this research consists of validating the workshop's objectives and, therefore, the workshop itself. The fact that students with a high level of content production

are more aware of the consequences and advantages of their digital identity reinforces the importance of promoting knowledge of technologies and their use at an early age as a tool for creating valuable content and always in a responsible manner.

Given the results, this workshop could be replicated for any field of knowledge. A clear example was the application of the same workshop in the 2020–21 academic year for non-engineering students in 6 schools and faculties of the Rey Juan Carlos University, 3 of which are not engineering. Moreover, the MOOC “Empower yourself with social networks” of the same university proposed for the public, not only university students, which goes into greater depth, uses the fundamentals of the workshop and the self-reflection tool of the digital identity developed. This workshop has also been offered in several editions for both master’s and PhD students.

The main limitation of this study is the lack of a questionnaire months later to find out whether the workshop has managed to increase proactivity and the management of professional digital identity in the students who went through the workshop.

Other difficulties include the need for teachers to keep up to date with the latest developments in web tools, such as social networks and their characteristics. It is complicated, and a challenge, to transmit to Generation Z students that social networks are not only a space where they can have fun, but also where they can professionally manage their digital identity.

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References

1. Fundación Telefónica. *Identidad Digital: El Nuevo Usuario en El Mundo Digital—España Digital*; Editorial Ariel: Barcelona, Spain, 2013.
2. Velavan, T.P.; Meyer, C.G. The COVID-19 epidemic. *Trop. Med. Int. Health* **2020**, *25*, 278–280. [[CrossRef](#)] [[PubMed](#)]
3. Díaz Barriga Arceo, F.; López Banda, E.A.; Vázquez Negrete, V.I. *La Identidad Digital de Estudiantes de Posgrado: Avatares, Entornos de Aprendizaje y Artefactos Culturales*; Universidad Nacional Autónoma de México: Mexico City, Mexico, 2017.
4. Boughzala, I. How Generation Y Perceives Social Networking Applications in Corporate Environments. 2014; pp. 162–179. Available online: <https://services.igi-global.com/resolvedoi/resolve.aspx?doi=10.4018/978-1-4666-6182-0.ch009> (accessed on 23 August 2022).
5. Terras, M.M.; Ramsay, J.; Boyle, E.A. Digital media production and identity: Insights from a psychological perspective. *E-Learn. Digit. Media* **2015**, *12*, 128–146. [[CrossRef](#)]
6. Georges, F. Digital eternities. Post-mortem digital identity from a semio-pragmatic perspective. *Alsic* **2017**, *20*, 1. [[CrossRef](#)]
7. Novakovich, J.; Miah, S.; Shaw, S. Designing curriculum to shape professional social media skills and identity in virtual communities of practice. *Comput. Educ.* **2017**, *104*, 65–90. [[CrossRef](#)]
8. Pérez-Escoda, A.; Castro-Zubizarreta, A.; Fandos-Igado, M. La competencia digital de la Generación Z: Claves para su introducción curricular en la Educación Primaria. *Grupo Comun.* **2016**, *24*, 71–79. [[CrossRef](#)]
9. Lara, T. El papel de la Universidad en la construcción de su identidad digital. *RUSC Univ. Knowl. Soc. J.* **2009**, *6*, 8.
10. Nelson, K.; Courier, M.; Joseph, G. An Investigation of Digital Literacy Needs of Students. *J. Inf. Syst. Educ.* **2011**, *22*, 95–110.
11. Punie, Y.; Ferrari, A.; Bre, B.N. *DIGCOMP: A Framework for Developing and Understanding Digital Competence in Europe*; The European Commission: Brussels, Belgium, 2013.
12. Carretero, S.; Vuorikari, R.; Punie, Y. The Digital Competence Framework for Citizens with Eight. *Publ. Off. Eur. Union* **2017**, *48*, 44.
13. Gupta, O.; Gulati, G. Psycho-analysis of Mobile applications usage among Generation Z Teens. *Int. J. Glob. Bus. Manag. Res.* **2014**, *3*, 80.

14. Vidales, N.L.; de Valladolid, U. Análisis y proyección de los contenidos audiovisuales sobre jóvenes y drogas en Youtube. *Estud. Sobre Mensaje Periodís* **2015**, *21*, 863–881.
15. McEachin-Williams, N.J. Social Networking Application Usage: Competencies and Trends among Pre-Millennials, Millennials, and Generation Z. 2018. Available online: <http://digital.library.wisc.edu/1793/79776> (accessed on 5 September 2022).
16. Cabero Almenara, J.; Barroso Osuna, J.; Martínez Pérez, S. Estudiantes: Nativos digitales o residentes y visitantes digitales? *Opción Rev. Cienc. Hum. Soc.* **2020**, *93*, 796–820.
17. Jelfs, A.; Richardson, J.T.E. The use of digital technologies across the adult life span in distance education. *Br. J. Educ. Technol.* **2013**, *44*, 338–351. [[CrossRef](#)]
18. Zhao, S.; Grasmuck, S.; Martin, J. Identity construction on Facebook: Digital empowerment in anchored relationships. *Comput. Hum. Behav.* **2008**, *24*, 1816–1836. [[CrossRef](#)]
19. Castañeda, L. A strange in the mirror? Students perceptions about their digital identity. In *EdMedia+ Innovate Learning*; Association for the Advancement of Computing in Education (AACE): Chesapeake, VA, USA, 2011; pp. 3275–3280.
20. Dostál, J.; Wang, X.; Steingartner, W.; Nuangchalem, P. Digital Intelligence—New Concept in Context of Future of School Education. In Proceedings of the ICERI2017 Conference, Seville, Spain, 16–18 November 2017; pp. 3706–3712.
21. Borrás-Gené, O.; Blázquez-Sevilla, A. Apuntes para El Taller de Identidad Digital 2020 #idUPM. Presented at the Taller de Identidad Digital, Madrid. 2020. Available online: <https://www.slideshare.net/oriolupm/taller-de-identidad-digital-2020-idupm> (accessed on 1 September 2022).
22. Osterwalder, A.; Pigneur, Y. Designing Business Models and Similar Strategic Objects: The Contribution of IS. *J. Assoc. Inf. Syst.* **2012**, *14*, 3. [[CrossRef](#)]
23. González, D. Canvas de identidad digital. Diana González. 2021. Available online: <https://dianagonzalezgonzalez.com/canvas-identidad-digital> (accessed on 5 September 2022).
24. Martínez Núñez, M.; Pérez Aguiar, W. Incorporación de las plataformas “Social Media” para la construcción de una identidad digital del discente en ingeniería. Platforms for the Creation of a Digital Identity for Engineering’ Learners Using “Social Media”. In Proceedings of the 6th International Conference on Industrial Engineering and Industrial Management, Kuala Lumpur, Malaysia, 8–10 March 2012; pp. 1288–1295.
25. Ripley, B.D. The R Project in Statistical Computing. *MSOR Connect. Newsl. LTSN Maths Stats OR Netw.* **2001**, *1*, 23–25. [[CrossRef](#)]
26. Speerschneider, K.K.; Bryer, J.M. Likert: An R package for visualizing and analyzing likert-based items. In Proceedings of the The R User Conference, UseR! 2013 University of Castilla-La Mancha, Albacete, Spain, 10–12 July 2013; Volume 10, p. 120.
27. Sullivan, G.M.; Artino, A.R. Analyzing and Interpreting Data From Likert-Type Scales. *J. Grad. Med. Educ.* **2013**, *5*, 541–542. [[CrossRef](#)] [[PubMed](#)]
28. Zapata-Ros, M.; Lizenberg, N. Construyendo la Identidad Digital del Alumno en Entornos de Aprendizaje. Entornos Virtuales Y Aprendizaje. 2013. Available online: https://www.academia.edu/7412408/Construyendo_la_identidad_digital_del_alumno_en_entornos_de_aprendizaje (accessed on 5 September 2022).
29. Magro, C. Identidad Digital, PLE y Competencias | co.Labora.Red. 2014. Available online: <https://carlosmagro.wordpress.com/2014/05/07/identidad-digital-ple-y-competencias-profesionales> (accessed on 5 September 2022).
30. Gallardo-López, J.A.; López Noguero, F. Twitter como recurso metodológico en Educación Superior: Una experiencia educativa con estudiantes de Trabajo Social. *Alteridad* **2020**, *15*, 174–189. [[CrossRef](#)]
31. Morón Marchena, J.A.; López Noguero, F.; Cobos Sanchiz, D. El Uso de las Redes Sociales en la Educación y Promoción de la Salud. Una Experiencia de Empoderamiento Social en Nicaragua. *Rev. Curríc. Form. Profr.* **2017**, *21*, 440–457. [[CrossRef](#)]
32. García-Peñalvo, F.J. Aspectos esenciales de la identidad digital del investigador. *Educ. Knowl. Soc.* **2021**, *17*, 7–18.
33. Selwyn, N. Faceworking: Exploring students’ education-related use of Facebook. *Learn. Media Technol.* **2009**, *34*, 157–174. [[CrossRef](#)]