

SOCIAL NETWORKS AND THE CONSTRUCTION OF IDENTITY IN DIGITAL ENVIRONMENTS

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The recognition of the creative, participatory and social dimensions of the Web brought profound changes to the way individuals approach education, identity, practice and knowledge. In a scenario characterized by connectivity and ease of access to people and content, the network provides a space where people can interact, learn, share experiences and build a reputation and identity available and accessible to the entire community. When it is almost impossible to stay out of the digital world and, therefore, of the production of an online identity, this paper addresses issues related with digital literacy, social networks and online identity. Presenting the main results of a case study developed at the University of Aveiro – Portugal, this paper describes how a group of students from a Master Degree Course adopted social networks to build a presence over the web and how they created, manifested and managed their online identity. When the characteristics of the digital world change the ways of building identity, and in a scenario where the contextualization of data and information is becoming increasingly important, this paper reflects upon the importance and relevance of building an identity in open social online environments.

Key words: Online identity, social networks, digital literacies, analysis model

1 Introduction

With the development of social media, the Internet became a platform where content is created and negotiated. In a scenario strongly influenced by the presence of participatory media and where the speediness and easiness of web access facilitates the interaction between different sources of knowledge, the individual moves between different online spaces and builds a path that reflects his/her identity as a person and as a learner. In a context where the digital dimension of life of individuals is becoming increasingly important, Web 2.0 technologies emerge as hybrid spaces that traverse the physical space and digital and create new ways of being and learning [1]. Immersed in a technologically rich environment and based on connections between people and systems, individuals articulate their presence among scenarios, groups and communities, harnessing the openness and flexibility of the web to build and reveal an identity that arches over many spaces.

When social networks are often seen as an alternative space for the construction of identity, the reflection and understanding of the positive and negative implications of having an online presence becomes one of great importance. Reporting to a case study developed at the University of Aveiro, this paper reflects upon the importance of having an online identity, describing how a group of students from a Master Degree Course use online social networks in order to build an identity capable of revealing to peers and to the community their personal, academic and professional competencies and skills.

In the next sections, the paper will address some of the key concepts related to the construction of identity in the digital world: digital literacies, social software in educational contexts and online social networks as a space for identity construction. Section 3 describes the methodological procedures that guided the development of the research, and introduces the Online Identity Analysis Model that emerged from the study. Section 4 presents the case study's main results and section 5 reflects upon the importance and relevance of building an online identity in open social environments.

2 Current Practice and Research

By emphasizing the contribution of the user in creating and organizing information, the network becomes a place where knowledge is socially constructed and shared, reflecting a human and social dimension where networks of people, data and services grow towards a connective and innovative environment [2].

The participatory web emerges as a place where knowledge is discussed and shared, nurturing the development of communities that enhance the collaborative skills that already exist in individuals [3]. In an environment where learners are encouraged to take responsibility for their own learning and where knowledge is seen as a process created and negotiated through interaction, social software can reshape the traditional model of knowledge transmission, leading to changes in the way individuals think and work [4]. In this scenario, the network (re)defines itself as a field where the frontiers of creativity can be expanded, and where each student assumes growing responsibility for his/her own learning.

2.1 Digital literacies: new needs, new skills

Over the years, there have been several attempts to expand the concept of literacy beyond its initial meaning, that is, the ability to read and write. In the information and knowledge society where technology is simultaneously a mediator and facilitator, expressions as computer and information literacy [5, 1], participation literacy [6] and digital literacy [7, 8, 6] are used in different contexts to describe and circumscribe the different types of skills and behaviours necessary to the proficiency in specific areas of work and knowledge [6].

Understood as the ability to comprehend and use information presented through computers, in multiple formats and from a variety of sources [7, 8], digital literacy often arises as an umbrella concept, a frame that encompasses different aspects referred to the integration and use of technology in the lives of individuals and institutions. [8] presents the idea of digital literacy as a concept articulated on three levels: a first, technical, focused on how to work with technology; the second, of thought and critical use of tools, links and digital resources; and the third, of critical reflection achieved through the understanding of the transformative, human and social impact of digital actions. For [8], one can only truly speak of digital literacy when addressing the second and third levels, considering the digital competence (that is knowing how to work with technology) as a precursor and a prerequisite for digital literacy:

“Digital literacy involves being able to carry out successful digital actions embedded within work, learning, leisure, and other aspects of everyday life; (...) Digital literacy is broader than ICT literacy and will include elements drawn from several related “digital literacies”;(...) Digital

literacy involves acquiring and using knowledge, techniques, attitudes and personal qualities and will include the ability to plan, execute and evaluate digital actions in the solution of life tasks; (...) It also includes the ability to be aware of one self as a digitally literate person, and to reflect on one's own digital literacy development. [8:166-167]"

In this context, literacy may include: (1) socially situated practices supported by skills, strategies and attitudes that encourage and support the ability of an individual to represent and understand ideas using various methods and digital tools [9]; (2) the creative use of technology, including the development of knowledge and of new digital tools, and the use of tools to meet individual and professional needs [8, 9]; and (3) the knowledge needed to manage the public and private digital spaces of individuals, allowing the construction of an identity able to reveal the individuals' profile, thus integrating the dimensions of their academic and professional lives [10].

2.2 Social software in education

The development of competences and skills related with digital literacy can be found in the creative and active use of digital tools, looking for the development of social and cognitive competences [9]. In the educational context, the use of information and communication technologies (ICT) altered the dynamics of collaboration, expression and teaching and learning processes, changing the traditional patterns of behaviour and interaction of students with the academic [11]. ICTs are being used to facilitate access to information and to promote the exchange and sharing of experiences between individuals and communities, encouraging the creation of more motivating, personalized and engaging environments [12].

When the knowledge economy requires new kinds of learners and creators, technology enables the learner to acquire and develop skills in a holistic manner, contextualized and embedded in real day-to-day experiences [12]. Students are adopting social software tools to support their learning needs and processes, to foster collaboration and sharing with their community and also as a way to build and explore their own online identity [13]. The network emerges as space where the individual assumes himself/herself as an active and conscious participant in his/her own learning process, building an identity that encompasses the formal and informal dimensions of his/her lives. In this scenario, tools and digital applications enable the individual to build a presence visible and accessible to the rest of the community, fostering the development of an online presence built in and through the interaction with others [8].

2.3 Social networks and online identity

The democratization of online space and the multiplicity of tools and applications allowed the emergence of numerous forms of interaction and communication [14]. Adopted in educational context, social software tools are being used to support learning processes within and outside the institutions [15, 16, 17, 18], fostering learners to develop a critical sense in the search for information and a personal awareness of their own identity [19, 14].

Taking advantage of the users' knowledge and familiarity with the tools and of the collaborative and interactive characteristics of the tools, social networks such as Facebook are being used, in educational field, as an alternative or complement to traditional learning platforms adopted by

institutions [19, 20, 21]. Defined as systems designed in order to foster socialization, information exchange (personal, social or even professional) and the establishment of personal and/or professional contacts, networks allow individuals “to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system” [22:211]. Through the adoption of concepts like friendships, rankings and communities, these systems allow the formation of a network of contacts where reputation – potential motivation factor – is built upon the importance or popularity of the users’ publications, evaluated by the members of the community [17].

In a context where technology allows learners the acquisition and development of competencies and skills that reflect their learning needs, social networks emerge as spaces favourable to participation and interaction, spaces where individuals can build an identity able to reflect and translate their capabilities and interests. When it is almost impossible to remain outside the digital world and, therefore, outside the production of an online identity [10, 23, 24], the construction of a presence over the web (identifiable through participation and interaction) enables the construction of an identity and a reputation on the network, recognizable through the publication of content [1, 10, 25, 26, 27], the creation of profiles [27, 28], or even through the typology of participation [29].

Aware of the differences between the digital and the physical world - namely the persistence and searchability of information, the replication of contents and information and the existence of invisible audiences as sustained by [28] -, individuals have now the opportunity to harness the openness and flexibility of the web to build an identity able to reflect his/her path as an individual, a learner and a professional.

3 Research Approach

In the information society, the study of the digital dimension of the individuals’ identity is one of great importance. In order to understand how individuals manifest, manage and perceive the identity built in digital environments, a case study was developed at the University of Aveiro (Portugal) focused on the analysis of the institutional and informal online presence of a group of students from a Master Degree Course. Data was collected through questionnaires, observation and in-depth interviews made to the aforementioned students (13 individuals, convenience sample, aged between 21 and 40 years, seven male, five female).

Questionnaires aimed to gather information regarding the social media user profile of the participants. Observation included the gathering and analysis of the content published by each participant on Facebook and Twitter in an institutionally supported web 2.0 platform (SAPO Campus^a) over a period of nine months (from September 2010 to July 2011). All messages were coded according to content (personal, social, academic, professional and organizational) and format (text message, link, audio/video content and photos). Categories and indicators used to code the messages

^a Developed at the University of Aveiro (UA) - Portugal, SAPO Campus (SC) is an integrated Web 2.0 services platform based on user-generated content production and aggregation for use in Higher Education Institutions. SC offers its users – students, lecturers, staff – a technological infrastructure able to foster and promote the development of communication, sharing and collaboration skills, contributing to more relevant learning experiences and offering its users the space to enhance, in an institutional environment, their digital presence and reputation. More about the SC project can be found at <http://campus.ua.sapo.pt/>.

were based on the work of [26] and [29], work that focused on the information presented by individuals on their social network profiles, and are provided in Appendix 1. A total of 3690 messages were analysed: 1249 Facebook posts; 2096 Twitter messages; and 347 SAPO Campus posts.

| Thematic Category: Digital Representation [DR] | | |
|---|--------------------------------------|--|
| <i>Subcategory</i> | <i>Subject of analysis</i> | <i>Indicators</i> |
| Identification Elements [DR/IE] | Username | Choosing real name, pseudonym, nickname as digital name |
| | Profile picture | Selecting a self-portrait, avatar, group photo, or landscape image as a way of representation |
| Additional Information [DR/AI] | Biographical information | Sharing information about name, birthdate, place of birth, nationality |
| | Contact information | Sharing information about postal address, e-mail |
| | Personal information | Sharing information related to interests, preferences, personal motto |
| | Relation with the community | Sharing information that establishes a connection with the community |
| Content [DR/C] | Connection to other online spaces | Sharing information that establishes the connection with other online spaces where the individual builds his/her presence |
| | Topics | Selecting topics according to the characteristics of the online space (personal, social, professional) Selecting topics according to the user's preferences, disregarding the online space where it is published |
| | Structure of the discourse | Adjusting the discourse (i.e. grammatical structure, vocabulary) according to the online space where content is published Non-adjusting the discourse (i.e. grammatical structure, vocabulary) according to the online space where content is published |
| | Content typology | Selecting and sharing content (personal, social, professional) according or adjusted to the online space where it is published Sharing content (personal, social, professional) disregarding the online space where it is published |
| | Content format | Selecting and sharing content (text messages, videos, links, audio files) according to the online space where it is published Sharing content (text, messages, video, links, audio files) disregarding the online space |
| Thematic Category: Privacy Management [PM] | | |
| <i>Subcategory</i> | <i>Subject of analysis</i> | <i>Indicators</i> |
| Registration process [PM/RP] | Registration e-mail or username | Using different usernames or e-mail accounts when registering in different online spaces Using the same username or e-mail account when registering in different online spaces |
| Contacts management [PM/CM] | Contact network (friends, followers) | Adding or segregating contacts according to the online space where the individual builds his/her presence Creating and managing groups Adding contacts disregarding the online space where the individual builds his/her presence |
| Contexts management [PM/CtxM] | Content published between spaces | Enabling automatic synchronization of content across platforms, establishing connection between different spaces Republishing content on platforms different from where it was initially published (e.g. sharing a blog posts on social networks) |
| Thematic Category: Reputation [R] | | |
| <i>Subcategory</i> | <i>Subject of analysis</i> | <i>Indicators</i> |
| Demonstration of skills, competences or abilities [R/DSC] | Published content | Sharing content with the intention of showing or demonstrating the existence of general or specific skills (e.g. sharing videos, posts, artworks, reports produced in formal or informal contexts) |

| | | |
|--------------------------------|---|--|
| Visibility and exposure [R/VE] | Reproduced content (between platforms or online spaces) | Sharing content in platforms others than the ones where it was initially produced, therefore increase visibility and exposure of produced content |
| | Interaction with peers or experts | Addressing and interacting with peers and/or experts, showing interest, sharing opinions and revealing interests in specific fields of knowledge |
| Reputation Scaffolding [R/RS] | Reference/mention/connection to the institutional online identity | Reproducing content published by the institution Sharing information that evidences the connection between the person's online identity and the institution online identity (e.g. sharing information about roles or job positions) |

Table 1 - The Online Identity Analysis Model [19]

The analysis of data collected through the in-depth interviews allowed for the identification and characterization of the main aspects of the participants' online presence, including motivations, mechanisms and strategies adopted in order to manage online identity, and the evaluation of the potential and/or real impact of the identity built in digital environments. Details of the questions asked in the interviews are given in Appendix 2. During the interviews, participants were asked to reflect about the way they express themselves online, how they managed their privacy, and also about the personal, social and professional impact of the identity they are building in online environments. Data gathered through the interviews evidenced that, when thinking about their online identity, participants revolved around three axes: digital representation (information and content published by the individual in order to represent himself/herself in digital online environments); privacy management (mechanisms and strategies adopted by the individual in order to control and manage his/her digital persona); and reputation (the actual or potential impact of online identity built by the individual). Once the interviews transcripts were analysed and encoded, the information was crossed with data collected through direct observation, leading to the construction of a model designed to be used in the analysis of the individuals' online presence, the Online Identity Analysis (OIA) model [19]. Individual indicators and letter codes were then associated with each category and subcategory, leading to the conception of the OIA model presented in Table 1.

4 Building identity in online environments: discussion of the results

4.1. Digital representation in Facebook and Twitter

The analysis of data collected through direct observation revealed that participants use social web environments and the institutional platform in a different way. While the presence built in the SAPO Campus platform was mainly academic (66% of the posted contents was academic related), with the predominance of photo sharing and text messages (45% and 32%, respectively), on Facebook the presence was mainly social, with predominance of audio and video contents. 82% of the content published in this platform was considered as being social content (that is, content that do not reveal user's personal information and that is mostly used in order to relate, in a casual way, with other members of the community), with predominance of audio and video contents (56% of the posts was coded in this category). Nevertheless, 10% of the published content was coded as content that reflected the participants' academic and professional interests. Of the 127 messages coded in these categories, 66% were hyperlinks to the participants' personal page on the institutionally supported platform.

| | <i>Content</i> | <i>Format</i> | | | <i>Total</i> | |
|-----------------|----------------|---------------------|-------------|--------------------|--------------|--------------|
| | | <i>Text message</i> | <i>Link</i> | <i>Audio/video</i> | | <i>Photo</i> |
| Facebook | Personal | 54 | 5 | 3 | 31 | 93 |
| | Social | 74 | 185 | 674 | 86 | 1019 |
| | Academic | 4 | 41 | 7 | 0 | 52 |
| | Professional | 4 | 43 | 7 | 11 | 65 |
| | Organizational | 0 | 15 | 3 | 2 | 20 |
| | Total | 136 | 289 | 694 | 130 | 1249 |

Table 2 - Content published in Facebook by participants

Similar to Facebook, on Twitter the participants' presence was mostly social, with 81% of the contents published in this platform coded in this category. There was, however, a significant presence of academic and professional content (15%), mostly composed by hyperlinks to the participants' academic and professional online spaces (65%) and audio and video files (31%).

| | <i>Content</i> | <i>Format</i> | | | <i>Total</i> | |
|----------------|----------------|---------------------|-------------|--------------------|--------------|--------------|
| | | <i>Text message</i> | <i>Link</i> | <i>Audio/video</i> | | <i>Photo</i> |
| Twitter | Personal | 40 | 10 | 0 | 12 | 62 |
| | Social | 598 | 748 | 272 | 88 | 1076 |
| | Academic | 68 | 120 | 5 | 9 | 202 |
| | Professional | 26 | 27 | 3 | 2 | 58 |
| | Organizational | 6 | 59 | 3 | 0 | 68 |
| | Total | 738 | 964 | 283 | 111 | 2096 |

Table 3 - Content published in Twitter by participants

4.2. *Managing identity in online environments*

When publishing content on the network, individuals are simultaneously producing a vast amount of information that may reveal, to others, aspects of their identity. As they are building a presence and trusting their data, information and content to systems that they do not control or own, individuals may choose to adopt specific strategies or mechanism in order to manage their privacy in online environments.

When asked to talk about the way they managed their online presence, participants pointed out: the previous edition and selection of content they publish; the non-publication of personal information and content; to have a special concern regarding the characteristics of the online environment (that is, publishing academic content in the institutionally supported platform and leaving social content to social online environments); and the editing of already published content (that is, editing or deleting content which is no longer pertinent or relevant). Participants also mentioned being careful when managing their online network contacts (either by creating groups in Facebook or by selecting contacts according to the social or professional character of the online space) and to create different e-mails accounts or usernames to be used in different online environments.

4.3. Social online environments and reputation

When publishing content on the network, individuals are also building an identity that they can use to share, to a wider audience, their personal, professional and social skills and competences. In a scenario where the online space allows the connection between users and communities, the construction of an online identity and reputation becomes a subject of great relevance and importance.

When asked to talk about the presence they were building in online spaces, participants mentioned to be aware of the importance of having an online identity available to the wider community. Nevertheless, only eight of the thirteen participants indicated using the online space as a platform to reflect their professional profile and reputation.

4.4. Context-driven and user-driven online identity profiles

As mentioned in section 3, the information collected from the interviews and direct observation led to the construction of the Online Identity Analysis Model [19]. By applying the model to the information provided by each participant, two main online identity profiles have emerged: (1) **context-driven online identity** profile, including individuals who mentioned to have special attentiveness to the content they publish online, selecting content according to the context and the characteristics of the online environment; (2) and **user-driven online identity** profile, including individuals who claimed to adopt a stress-free attitude towards their online presence and, therefore, to share content disregarding social constrains or other users' opinion.

The participants included in the **context-driven** profile, although having in common the carefulness and attentiveness when selecting and publishing content on the network, presented two different approaches to online identity: a first group, despite having an active online presence, claimed to choose not to publish either personal or academic/professional content, building a presence based on social content and social interaction; and a second group, composed by participants who claimed to use their online spaces to build a professional profile and reputation. In order to achieve it, they select and publish information that reflect their actual interests and occupations, their skills and competences. As they wish to expand their area of influence and evidence themselves as professionals, these participants shared content between platforms and even added experts to their network of contacts, interacting with them in order to reveal their own expertise.

Participants included in the **user-driven** profile, although revealing awareness of the visibility and exposition of their online presence, sustain to be building an identity that mirrors their real self, sharing content disregarding social constrains and the specific characteristics of the online space. Comfortable in sharing both personal and professional content and to reveal their opinion regarding sensitive issues (e.g. political, ideological), these participants also enabled the connection between informal and formal environments by sharing content and online profile addresses between platforms.

5 Conclusions

When the economy of knowledge demands for skills and competencies as the ability to communicate, to work in teams, and also for flexibility, initiative, self-confidence, and the capability to accept new challenges, the individuals' online presence may reveal the sum of their experiences and skills, reflecting the path of their journey as learners and professionals. As active producers of online content,

individuals are also building an identity available and accessible to almost everyone. The network becomes an environment where learners can be encouraged to build an identity and develop a social presence that complements their professional activity and academic profile [10]. More than *Curriculum Vitae*, the construction of an online identity enables the construction of an identity over the network that reflects the path of the learners' personal, academic and professional lives.

In the new global and connected world, the study and comprehension about how identity is built and manifested in online environments may be the basis for the development of more valuable and well-prepared learners. By presenting the main results of a study focused on the processes that support the construction of identity in digital environments, this paper may contribute to the comprehension of the importance of building a presence over the web. Although limited to the specific context of a Master Degree Course, its findings may be useful for the planning of future approaches where the integration of technology in educational contexts is intended.

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Appendix 1: “Content” category indicators

The following is the information concerning categories and indicators used to code content published by the participants.

| <i>Category</i> | <i>Indicators</i> |
|-----------------------|---|
| Personal | Reference to family or friends Revealing emotions or states of mind (frustration anxiety, love) Revealing personal opinions regarding sensitive issues (politics or religion) |
| Social | Publishing content related with films or music Publishing messages that do not reveal the individual’s opinions or preferences Publishing trivial contents |
| Academic | Sharing contents related with the academic activity Publishing academic related work |
| Professional | Publishing professional related contents Publishing contents which address the individual’s competencies and skills |
| Organizational | Publishing content related to the individual’s organization or employer Publishing content on behalf of the individual’s organization or employer |

Appendix 2: Interview questions

The following is the information asked during the in-depth interviews.

1. You are online, have an account on Facebook, you publish over the web. In general, how would you describe your online identity, the identity you have on the network?
2. When you use your online spaces online, do you try to maintain some degree of separation between them, keeping some more personal and more open, others more professional? What kind of measures or strategies do you adopt in order to maintain this separation?
3. Regarding the content you publish online: do you have any concerns about only publishing things that favor you or that you believe will be well accepted, or prefer/are comfortable to show your strengths and weaknesses and let whoever reads it realize that you are able to learn from mistakes? What do you think the best approach?
4. You are registered in SAPO Campus. What kind of content public?
5. In SAPO Campus, your virtual identity is linked to your real identity, while a student. How does that influence what you public/how you manifest yourself in this institutional online environment?
6. How important, for you, the fact that your contents are visible to the entire academic community - classmates, teachers, academia in general? It is, in your opinion, an advantage or disadvantage? Why?
7. Now pretend to be a potential employer. In your opinion, what does your online presence - your profile on Facebook, LinkedIn, your activity in the SAPO Campus - say about you? What you publish, it could be advantageous to you? And what would you like not to be related with you?
8. Do you have hobbies or activities / interests that you share on the network? In your opinion, could that information strengthen a possible application for a job? And what do you think about the fact that companies (for example) search your activity on the network?
9. How does your online presence reveal or demonstrate the competencies you acquired during your academic experience?
10. In what extent your online identity and your online contents could be important when applying for a job or when you think about your professional future?
11. Back to SAPO Campus. Is it important for you, to have an online presence associated with your educational institution? What advantages you have as a student? And what disadvantages? And on the university perspective: do you think the institution will gain or lose with the fact that their students are using this platform? What possible advantages and problems can you see, both for students and for the institution?