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**AN EMPIRICAL ANALYSIS OF THE EDUCATIONAL EFFECTS
OF SOCIAL MEDIA IN UNIVERSITIES AND COLLEGES**

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Abstract: *In an era of fundamental changes in education brought by virtual worlds and augmented reality, dominated by mobile devices and applications, it is necessary to rethink the academic work environments based on the use of social applications like Facebook, YouTube or Twitter, in accordance with the skills and learning needs of students. In this context the authors discuss how today's Romanian higher education actors perceive and use social media, trying to find out the answers to questions such as: How faculty members use social media as reflective and collaborative teaching and learning tools, also for research and professional development? Which are the potential benefits, challenges, and disadvantages in using social media in universities? Is there a need for training the educational actors in this topic? Thus in order to shed light on the research issues, we have developed and applied an online questionnaire for scholars from different universities and colleges from Romania. Although our findings revealed an increasing use of social media by educational actors for the time being, only a few universities have adopted coherent strategies and policies for the pedagogical integration of social media and the development of the best methods for teaching and learning based on these strategies.*

Keywords: *social media, higher education, university, scholar, faculty members*

I. THE SOCIAL MEDIA LANDSCAPE IN HIGHER EDUCATION CONTEXT

Social Media is a generic broad term covering a large range of online platforms and applications which allow users to communicate, collaborate, interact and share data [7, 24]. It encompasses easily-accessible web instruments that individuals can use in order to talk about, participate in, create, recommend and take advantage of information, in addition to providing online reactions to everything that is happening around them.

Given dynamic nature and complexity of the social media it makes quite difficult to define the concept. According to [14] the confusion is even bigger among educational managers and academic researchers. Even we are not sure what is anymore [17], we consider social media as today's most transparent, engaging and interactive shift in education, „a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user generated content” [4]. Thus, social media is about transforming monologue into dialogue, about free access to all types of information, about transforming internet users from mere readers to creators of content, about interacting in the online world so as to form new personal or business relationships.

Often used interchangeably with Web 2.0 we encounter social media on many different forms [7] like blogs, microblogs, social networks, media sharing sites, social bookmarking, wikis, social

aggregation, virtual worlds, social games and so many other (social) online artefacts. Nevertheless social media remain the communication and collaboration media that have registered the most important growth during the past years.

With the emergence / increased use of social media tools, a large number of higher education institutions are embracing this new ecology of information [4]. More and more colleges and universities from all over the world are transitioning from traditional learning towards learning 2.0, widening their curriculum landscape beyond technology by integrating different forms of social media [11]. Although in the literature there is no specific educational oriented definition, [6] give an indication that in order for learning 2.0 to occur, it is necessary to rethink the social academic work environments based on social media tools, in accordance with the learning needs, skills and competencies of students [23, 21].

The authors believe that it is important to get to know the specific characteristics of the audience of these social platforms, the applications and tools provided, with the aim of drawing correct usage and promotion principles that are applicable in the academic environment. Thus, the following section will discuss the findings of a mini-research undertaken by the authors within a broader project concerning the role of social media in Romanian higher education context.

II. RESEARCH METHODOLOGY

2.1. Objectives and questions

The purpose of this mini-study is to gather information on ways in which academic staff is adopting social media platforms and to identify best uses. To ensure this objective is met, the following research questions are proposed: *How faculty members use social media as reflective and collaborative teaching and learning tools, also for research and professional development? Which are the potential benefits, challenges, and disadvantages in using social media in universities? How the usage can be extended, is there a need for training the educational actors in this topic?*

2.2. Method

For collecting the necessary information, we conducted an online questionnaire, publicized via academic networks of the authors' universities, relevant academic mailing lists, personal learning networks, as well as Twitter and Cirip, Facebook, LinkedIn and other social web platforms.

Data collecting was performed between the end of February and the beginning of March 2012, with 79 respondents/answers, after validation. Because only a few people from our networks re-send the link to the questionnaire, it was difficult to calculate the response rate.

III. SUMMARY OF THE FINDINGS

3.1. Respondents profile

Based on the findings obtained from the sample group we'll begin with basic information about respondents' profile. *Who are they?* By gender 41 are male (52%) and 38 female (48%). By age the higher percent is allocated to the population between 36-45 years old (37%), 43% having less than 35 years.

What is their role in higher education? We managed to attract a wide variety of respondents at different stages of their academic careers: Professor – 5% (4); Reader – 15% (12); Senior lecturer – 19% (15); Junior lecturer – 14% (11); Researcher 5% – (4); Professor doctorate coordinator – 1% (1); Academic administrator/Faculty development – 4% (3); Other – 36% (29). Where „Other” includes respondents who are in non-academic positions such as librarians, admission officers, trainers/instructors, doctoral candidates or master students etc.

What is their academic profile? While at first glance the results suggest that the categories were not comprehensive enough, we tried to cover all disciplines ranging from mathematics to medical sciences. Thus, almost half of the respondents (43%) aligned themselves with the exact

sciences disciplines (i.e. mathematics, physics, biology, informatics, engineering, earth sciences). 24% (19) identify themselves as aligned with a discipline of social sciences (psychology, education, social work, political sciences), 13% are related with medical domain, 8 persons are humanistic oriented (foreign languages, philosophy, journalism, law) and only 8% are in the economic area (management, marketing, human resources, public relations, administrative issues etc.).

We didn't take into consideration some demographic characteristics such as: how many years a member staff worked in higher education, the type of institution (college/university, public or private), size of the organization, tuition / without fees etc. - these issues will be addressed and detailed in a future research.

3.2. Social media accounts profile

A second group of questions collected data about the specific social media platforms on which the responders are active, how they use them and what are the benefits and limits encountered. On most social media platforms 90% of users are passive lurkers who never contribute, 9% are active lurkers who reshare or comment, while only 1% are content creators or co-creators [20]. *Do Romanian educational actors follow this Social Media Engagement Rule?*

The question „How do you use the following social media?” refers to the use only for documentation or also for content creation of a large area of networks and social media platforms. The analysis of these large categories, covering the current social media landscape [22], makes an important difference between our investigation and other recent studies [8, 19].

SOCIAL MEDIA USAGE			
Social media networks and applications around content used for	Documen- tation %	Post notes/ content %	Not a user %
Blog (any type of platform / Blogger, WordPress, weblog.ro)	22	44	34
Miniblog (Tumblr.com, Posterous.com)	14	6	80
Microblog (Twitter.com, Cirip.ro, Plurk.com, Edmodo.com)	19	29	52
General Social Networks (Facebook.com, Plus.Google.com, MySpace.com)	10	68	22
Professional Social Networks (LinkedIn.com, Xing.com, Academia.edu)	28	48	24
Social Bookmarking (Delicious.com, Diigo.com)	10	23	67
Video sharing (Youtube.com, Vimeo.com, TED.com, TeacherTube.com, Trilulilu.ro, MyVideo.ro)	46	43	11
Image sharing (Flickr.com, Picasa.Google.com, deviantART.com)	29	49	22
Audio/Podcasting sharing (Blip.fm, SoundCloud.com)	10	10	80
Presentation sharing (Slideshare.net, Authorstream.com, Prezi.com)	22	39	39
Document/Books sharing (Scribd.com, DocStoc.com, Docs.Google.com, Books.Google.com)	32	56	13
Mindmaps (Mindomo.com, Mindmeister.com, Spicynodes.org)	6	18	76
Screencasting (Screenr.com, ScreenJelly.com, ScreenCastle.com)	4	13	84
Livestreaming (Qik.com, UStream.com)	6	9	85
Feeds Monitoring (Reader.Google.com, Bloglines.com)	24	24	52
Wiki (Wikispaces.com, MediaWiki.org, Wikia.com, PBWorks.com)	44	34	22
Digital storytelling (Voicethread.com, Glogster.com, Capzles.com, Notaland.com, Storybird.com, Storify.com, Photopeach.com, Projeqt.com)	0	15	85

Almost all respondents are aware of the large categories of platforms. The most popular seems to be those for multimedia content sharing: video – 89% of responders declared that they use such platforms, documents/books - 87%, image – 78%, in all cases at least half posting content. The large interest for the documents/books sharing (78%) and presentation sharing platforms (61%) confirms the social reading trend in the 2012 Horizon Report in higher education. However, we can note that the

platforms for podcasting and audio sharing are at the opposite pole of interest – only 20% of respondents use them.

More than two third are active on wikis (78%), general networks (78%), professional networks (76%) and blogs (66%), and more than half of them post content on these platforms, the highest rate of postings being on general networks (68%). Half of respondents (48%) monitor feeds to keep track of news and activate on microblogs. As one of the most important usage of microblogging is for news searching (56% in [10]), the micro-posts streams can be seen as curated feeds, containing news, but also comments and validation. Only 20% pay attention on miniblogs (such as Tumblr and Posterous). Even if with very interesting and challenging uses, such as collaborative work on scenarios, tutorials and micro-lectures, the educators show a low interest on mindmapping (24%), screencasting (16%) or digital storytelling platforms (15%). An explanation could be the fact that to use such platforms you need to be and keep informed, to activate in online communities where to learn and share ideas and experiences.

Calculating an average for all the platforms, we can affirm that 31% of respondents create content, a percentage much higher than that of 9% for active lurkers and 1% for creators. But before concluding that the Romanian educational actors are breakers of the „Social Media Engagement Rule” [20], we shouldn't forget that the questionnaire responses were received from active users who wanted to get involved in this research approach.

PLATFORMS FOR COMMUNICATION/COLLABORATION/LOCALIZATION		
Do you use the following social media for communication / collaboration / localization?	No	%
Groups (Groups.Google.com, Groups.Yahoo.com, Ning.com, Meetup.com)	71	90
Forums/Spaces for discussions (phpBB.net, Quora.com, Disqus.com)	26	33
Localization (Foursquare.com, Yelp.com, Zvents.com)	8	10
Augmented reality (Layar.com, Wikitude.com, Zooburst.com)	6	8
Virtual worlds/Social Games (Secondlife.com, Playdom.com, OpenSimulator.org)	7	9
IM (YM, GTalk, Jabber, Skype)	53	67

If the groups or IM tools, which can be considered as Web 1.5 applications, are used by a large majority (90%, respective 67%), the new discussions applications, such as Quora or Disqus, are known for only 33% of respondents, localization for 10%, augmented reality (AR) for 8% and virtual worlds/social games for 9%. These figures can be correlated with the issue that the experience in integrating such tools in education is lower, also with the fact that the applications for localization and AR are mobile, and we'll see that a relative low percentage of educators use mobiles or tablets/ipads.

At the question „*What other social media tools/categories do you use?*” even if only a few answers were received, they are very interesting and worth to be mentioned: collaborative graphs and infographs, desktop sharing applications (BeemYourScreen), eLearning platforms (Moodle, Sharepoint) with social media features, platforms for academic research (Researchgate), for social learning (Schoology), for project management (Basecamp), or for software engineering (GitHub).

ARE THE FOLLOWING STATEMENTS TRUE FOR YOU ?			
Statements related to social media	Yes (%)	Not yet, but I'm aware of it (%)	No (%)
I access social media via mobile	46	27	28
I access social media via tablet / ipad	15	48	37
I evaluate the activity of my students on social media platforms	30	27	43
My institution assesses my activity on social media platforms	15	24	61
My institution encourages/supports the usage of social media by teachers/students/pupils	34	30	35
My institution has specific policies related to social media usage	15	37	48
I became familiar with SM during a course/ workshop/ project	30	4	66

Almost half of the respondents access social media platforms using mobile phones, while only 15% are equipped with tablets / ipads. A third (28%, respective 37%) seem not to be interested in using mobiles or tablets / ipads for this purpose.

The percentage of teachers (30%) who evaluate the activity of their students on social media platforms is very close to that of teachers (34%) coming from institutions which encourage and support the use of social media by teachers/students/pupils. However, we can note that the institutions of only 15% of responders assess their activity on social media platforms or have specific policies related to social media usage. Even if only one third of educational actors became familiar with social media during a course, workshop or project, a very low percentage (4%) are interested to participate in such a training. A breakdown of educational actors awareness in using social media in different activities appears in the following table.

DO YOU USE SOCIAL MEDIA FOR THE FOLLOWING ACTIVITIES?			
Activities	Yes – I have used	Not yet, but I’m aware of it	No
didactical activities	61%	18%	22%
research activities	58%	20%	22%
professional development	78%	11%	10%
personal development	78%	8%	14%

The greatest percentage (78%) is using social media for professional and personal development, while high percentages are also for those who use such tools for didactical activities (61%) and research activities (58%). We can say that there is a true adoption of social media in all the domains of the educational process, the rate being much higher than that concerning only the specific technology of microblogging [10]. The survey showed there is a relative small group of educators (10-22%) who believe that social media has no place in education.

Regarding the mode of communication and collaboration we see that social media are a medium used at all levels, with peers from their own country or abroad, by around two third of responders. Again the percentages are much higher than those for microblogging, which still has a narrow adoption [10], the same note is available for the next question too. What seems surprising here is that the lower level of own department/faculty (with the highest f2f interaction) is the one where social media tools are highly used, by 77% of responders.

LEVELS OF COMMUNICATION/COLLABORATION		
I work with ...	Number	Percent
Peers from different institutions from Romania	52	66%
Collaborators in different institutions from other countries	47	59%
Colleagues / peers across my university / institution	49	62%
Peers and Doctoral and Master students of my own department / faculty	61	77%

The following table includes what our study have been revealed regarding the most common types of uses of social media by scholarly community.

CONTEXTUAL CONDITIONS IN WHICH SCHOLARS USE SOCIAL MEDIA		
Activities	Number	Percent
Searching news, academic content	70	89%
Dissemination of own results, articles, projects, presentations	49	62%
Inquiring/research (reviewing literature, collecting/analyzing research data)	52	66%
Personal / Professional Communication / Collaboration	65	82%
Networking for professional development	36	46%
Building a community of practice	24	30%
Building a learning community with students enrolled in formal courses	30	38%
Participating / following different scientific events (as a real time news-source)	52	66%

The findings indicate that social media usages by educational actors are:

- *Search for scholarly content* - the highest percentage of responders (89%) are looking to discover news, ideas, experiences, articles and projects.
- *Dissemination channels* for promoting own results / articles / projects or presentations - appreciated as being powerful by 62% of respondents.

- 66% say that social media tools are important in *reviewing the literature, collecting and analyzing research data*.
- *Sharing professional experiences online*, communicating scholarly ideas, collaborating with peers or with networks of stakeholders are favorite activities for 82% of users.
- Building a *network of contacts* for research opportunities, for finding sponsors or for reaching fellow specialists was indicated by 46% of the responders.
- Less than one third (30%) appreciate the power of sharing, skills development or knowledge creation by building *communities of practice*.
- A percentage of 38% show a low interest in building *learning communities*, student centered. Thus we can say faculty members are (still) unprepared to integrate social media in their courses.
- Nowadays *following* presentations, livestreamings, videos and posting from *scientific events* is a common practice, adopted by two third of responders (66%).

The questionnaire has also two open-ended questions asking respondents to list / to identify main advantages and constraints to uptake when using social media in higher education. Almost all the respondents share their impressions, which ranged from positive general comments to negative remarks, like „I think social media are very useful for communication and collaboration” to „I just don’t get it”.

Although social media redefine the relation between technology and education, using them in academic courses does not represent an easy teaching / training / researching and learning method. It implies a sum of efforts, and especially knowledge of these technologies, with both benefits and limits.

Advantages expressed by participants:

- *accessibility and ease of use* (anyone can create a blog or a YouTube account in just a few minutes), including mobile devices and applications (smartphone, tablets, qr-codes, augmented reality etc.);
- *cost reduction* (low educational marketing costs) – most social media sites offer access to services, information and community free of charge;
- *flexibility, transparency and autonomy of applications*;
- *educational „recruit ability”* in social networks (the results support what [2] study documented: higher education institutions are using especially social networking sites, not only to recruit but to research prospective students);
- *changing teachers’ attitudes* towards using social media in academic courses (taking academics out of their usual comfort zone);
- *engaging / enriching / empowering students’ interactions and participation* through the use of social media in academic environments;
- *collaborative characteristics / features* which erase the barriers between formal and in/non-formal learning;
- *establishing relationships and conversations* among teachers, students, professionals, researchers from different institutions;
- *facilitating learning* through personal learning networks / environments (peer-to-peer learning and mentoring);
- *social interactions* in communities for learning, practicing, as well as professional ones (learning from experts and peers);
- *teaching / learning digital skills* like creation, curation and sharing online/digital content/knowledge;
- *easily-accessible creativity / accumulative information*;
- *„use of authentic study materials”*, some of them in real-time (i.e. microblogging is an easy way to engage in dialogues with anyone, for instance);
- a non-conformist and flexible academic environment (*„easy socialization”*);
- *facilitating the processes of providing information, of building knowledge („a modern approach of educational subjects”)*;

- *feedback* (one can receive ideas, suggestions and opinions from mere visitors, one can update the strategy or educational services, or improve the course);
- *easy monitoring online presence and reputation*;
- *collaborative participation* - developing research projects at distance;
- using *open education* in terms of: open source / free software, open educational resources, open content, open access publication, open teaching, open scholarship.

Almost all of the respondents highlighted barriers or limits of using social media in higher education. Based on their responses, it appears that most of the comments are related to the following **disadvantages**:

- *content trivialisation* caused by a lack of validation procedures (the crowdsourcing effect);
- *security of data and persons*; *aggressive / mistrusted / unfiltered information flows* (one of the respondent said „it has the same taste as an unfiltered beer”);
- *online information / cognitive overload*, advertising interference, informational abuse, spam, disorientation, infoxication, fragmentation etc.;
- *equality or e-quality* (anyone can publish web content, but not everyone offers quality content; unsolicited content); *neglecting the educational goals / purposes / social limitations*;
- *difficult management of digital identity / anonymity*: fake IDs and hiding one’s real identity have been and will continue to be issues;
- *ethical concerns*: proper professional behaviour in the use of social media: confidentiality, defamation, following university regulations / the academic social media policy;
- *institutional norms / terms of use and best practices in the field*, disadvantages policies for educational sector (i.e. in Romania there are no academic clear rules regarding the use of social web tools in education; there is also a need to have a unique platform for the entire university / professional staff);
- *time spent on social media sites*: all things require time and dedication, and social media entails online presence, dialogue and sustained activity;
- social media also requires *a certain life style and/or an organisational culture* in the digital era; *emotional barriers*: perceptions of technology, anxiety related to its use, lack of confidence in their potential and negative personal experiences related to technology
- *artificial communication*: written communication vs oral communication (f2f vs online)
- *the noise*: pseudo-relationships, in-appropriate reactions, personal exposure etc.;
- *the activity with / within social media isn’t recognised as academic* (more specific – it doesn’t count in periodic assessment).

For the time being, we can say that only a few universities have adopted coherent strategies for the pedagogical integration of social web functions and the development of the best methods for teaching and learning based on these. Thus, for a more accurate picture of social media landscape in academia it is necessary to repeat the study at least for several years to provide a longitudinal look at adoption of social media by colleges and universities.

It is also necessary to build online communities for professional learning, academic practice, quality and leadership for managers of institutions, as well as for the people involved in both teaching and administration. There should be more social media platforms dedicated to communities of education experts (policies, foresight, etc.), there should be an institution-wide *Social Media Observer* that strengthens university policies related to social media at the level of the higher education institution and that represents, at the same time, a landmark for the strategic positioning of universities within the new technological landscape. However, an informal social media educational platform, functioning in conjunction with the official platform, will not only become an extremely efficient communication channel, but will also emphasize the culture of the students and that of the staff of the institution in question. The most important type of feedback will continue to be interactivity.

IV. CONCLUSIONS

Despite social media popularity among staff [18] and of the predominantly positive perceptions of it among higher education institutions, the use of social media „does not come easily” [12] and is still at the level of experimentation, as it is trying to find its place in the online environment of Romanian higher education area. In the meantime, Academia must free itself from its fears, prejudices and arrogance. In order for this to happen, the management of higher education institutions must change, firstly by acknowledging the need to have a social media presence, and then by providing clear regulations regarding its use (private life, protecting intellectual property, etc.). It is also important to recognize the importance of social media in the recruitment of students, dissemination of research and brand building (alumni included), as an engagement tool and not as a megaphone [5]. Furthermore, we need assigning social media responsibilities within faculties and departments. Thus, the organisational charts of our institutions should include „new” positions such as: learning architect, learning / social media community manager, serious game designer or learning autonomy counselor [11]. Perhaps the most significant approach of using social media in universities is the fact that it is more a socio-cultural phenomenon, rather than a technical one, an attitude rather than a sum of technologies, the fact that it has become more personal to the students, emphasizing the development of communities of learning and practice and the strength of something done together.

To conclude: We believe it is necessary that *a social media education* to be accompanied by a *social media in education*.

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