

THE USE OF INSTAGRAM ON EDUCATION AT THE UNIVERSITY LEVEL: A CASE STUDY ON THE BUSINESS MANAGEMENT SUBJECT BELONGING TO THE INDUSTRIAL ENGINEERING DEGREE

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Abstract

With one billion monthly active users, Instagram is one of the most popular social networks worldwide. A review on the role of Instagram in education has led to identify different purposes on Instagram use in different knowledge areas of teaching, and in different levels of education. This article presents the use Instagram application as an educational resource in the teaching-learning process, within the university environment. The objective is to improve this process through self-learning, developing posts with content related to the business management subject, specifically in the research area of industrial engineering. The purpose is threefold: (i) theoretical learning, the student uses Instagram posts published by the teacher to learn pills of concepts; (ii) practical learning, the student uses the teacher's posts related with industry professionals, showing the application of theoretical concepts in real life; (iii) autonomous teaching-learning, the student develops the content and posts of the Instagram account, with the supervision of the teacher.

Keywords: Instagram, teaching-learning process, teaching innovation, business management.

1 INTRODUCTION

With one billion monthly active users, Instagram is one of the most popular social networks worldwide. As of April 2021, close to 33 percent of global Instagram audiences were aged between 25 and 34 years. Over two thirds of total Instagram audiences were aged 34 years and younger and this makes the platform particularly attractive for students [1].

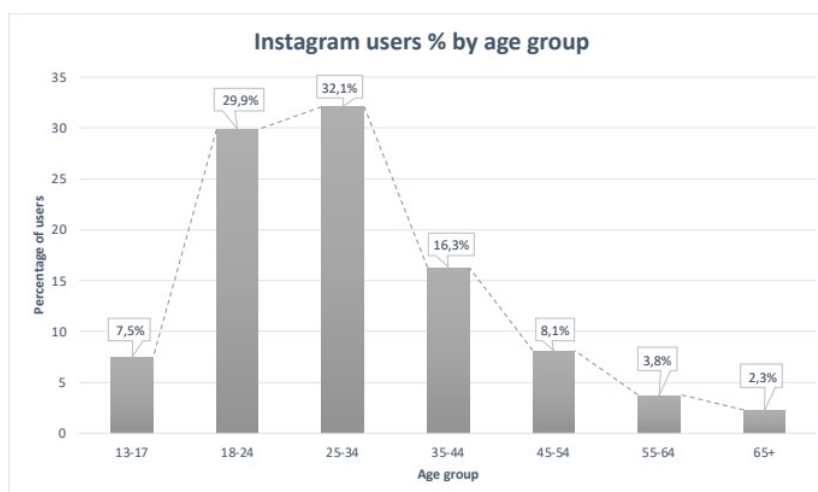


Figure 1. Distribution of Instagram users worldwide as of July 2021, by age group [1].

If we look at scientific sources, we can find the following information what concerns to the use of Instagram in education, by using the keywords TITLE-ABS KEY (instagram AND in AND education)

the following number of document results have been encountered: (i) Scopus: 392 document results; (ii) Science Direct: 3,841 results; (iii) Google Scholar: 637,000 results (0.05 sec).

A review on the role of Instagram in education has led to identify different applications on Instagram use in different knowledge areas of teaching, and in different levels of education. From medical sciences that refer to the use of social networking sites between medical students and medical educators, to economic education, radiology, engineering, business, social sciences and humanities. And from upper secondary education to post-secondary non-tertiary education, short-cycle tertiary education, bachelor's or equivalent, master's or equivalent.

Table 1 gives an insight on how the use of social networks has been used in the education. From the literature review, we can conclude that amongst the ten the most cited papers in the field of study (Instagram AND in AND education), are mostly issued in the medicine teaching field. Medicine teaching and research field is a very applied science. Therefore, we can deduce that the use of social networks can be used also with other teaching and research fields such as the one studied in this paper, industrial organization and business management.

Table 1. Papers addressing the use of social networks in education per teaching field.

Author	Concept of study	Teaching Field
[2]	Go Where the Students Are: A Comparison of the Use of Social Networking Sites Between Medical Students and Medical Educators	Medicine
[3]	Incorporating Twitter, Instagram, and Facebook in Economics Classrooms	Economics
[4]	Use of social media in Radiology Education	Medicine
[5]	Plastic Surgery-Related Hashtag Utilization on Instagram: Implications for Education and Marketing	Medicine
[6]	Assessing the success of university social networking sites: Engineering students' perspective	Engineering
[7]	The influence of social media in minimally invasive surgery education: How surgeons exchange experience and knowledge in these platforms	Medicine
[8]	Insta-graded plastic surgery residencies: the rise of social media use by trainees and responsible guidelines for use	Medicine
[9]	Instagram as a vehicle for education: what radiology educators need to know	Medicine
[10]	<i>Reviewing the Role of Instagram in Education: Can a Photo Sharing Application Deliver Benefits to Medical and Dental Anatomy Education?</i>	Medicine
[11]	<i>Use of Smart Phones and Social Media in Medical Education: Trends, Advantages, Challenges and Barriers</i>	Medicine
[12]	Social Sciences & Humanities Open Student engagement and social media in tertiary education: The perception and experience from the Ghanaian public university.	Social sciences Humanities

Worth to mention also, the studies of [13-16] that focuses on the use of social media in a from a general perspective. Those studies address how social media can be used as: (i) tools for information dissemination in higher education; (ii) to promote motivation and learning in higher education; and (iii) gamification tool in the classroom.

This paper proposes the use of Instagram social network for its application on higher education, specifically in the research area of industrial engineering and business management.

The objective of the paper, is to propose a support tool for the reverse teaching methodology that improves the teaching-learning process. For this, the use of Instagram social network is proposed. The specific objectives are described:

- Objective 1: Consolidate concepts of the subject before starting to apply them.
- Objective 2: Apply theoretical concepts through publishing posts that use real cases with professionals in the field of business management, including former students who develop positions related to the subject under study.
- Objective 3: Increase student participation in their learning process.

- Objective 4: Promote the active participation of the student to create posts with its own content, developing related topics and applications to the subject.
- Objective 5: Promote self-evaluation among peers through active reading and writing of the generated posts.

2 ACTIVE TEACHING AND LEARNING METHODOLOGIES

Emotion is a key element for learning that is why the teaching-learning process has not to be only intended to awaken emotions but also to teach with emotion (see article: "Emotion as a key to success for Operations Management") [17]. For this, different teaching methodologies are used that complement each other, leading to reinforce and consolidate learning:

✦ Reverse teaching (Flipped teaching)

It is a way of working based on the learning results that we want to achieve in the student, and by which, those simpler and more concrete results can be worked more autonomously by them (generally at home), while the more complex results, and of a higher cognitive level, will be worked on with the teacher's guidance and support (usually in class).

✦ Game-Based Learning (GBL)

It is an educational methodology consisting of using games and / or video games in the classroom to learn content and skills, as well as their evaluation by teachers.

✦ Gamification

It is an educational methodology that is based on using game elements to design learning experiences that could take place without enjoying the playful component, but that, when planned following the guidelines that characterize this methodology, turns them into attractive and motivating proposals for students.

✦ Project-Based Learning (PBL)

It is a learning methodology in which students acquire an active role, and academic motivation is favored. The method consists of carrying out a project usually in a group. This project has been previously analyzed by the teacher to ensure that the student has everything necessary to solve it, and that in its resolution he will develop all the skills that are desired.

✦ Experience-based learning (Learning-by-doing)

It is a way of working, based on the learning results that we want to achieve in the student, and by which, those simpler and concrete results can be worked on. The pedagogical method known as experiential learning tries to develop the capacity of the students to learn from their own experience, always within a concrete and well-developed conceptual and operational framework.

✦ Role-playing games (RP, Role-Playing)

A role-playing game is a game in which players take on a specific business 'role' and interpret their dialogues and describe their actions.

✦ Process simulation (Simulation)

Simulation techniques are used to analyze current processes (improvement and optimization) and future processes (anticipation of solutions) in order to obtain the most efficient design with different objectives: optimization of resources and validation of the investment to be made.

3 METHODOLOGY

Our proposal is to use the Instagram posts as a support tool for the reverse teaching methodology. In such a way that it is not only used to consolidate concepts, but also involves the student in their participation to generate teaching material that motivates them to reach the six levels proposed by Bloom's Taxonomy, until they reach the level of creation. For the creation of Instagram posts, a set of phases are described in the document.

This article presents the Instagram application as an educational resource in the teaching-learning process, in the university environment. The objective is to improve this process through self-learning, developing posts with content related to the business organization. This paper proposes the use of Instagram social network for its application on bachelor's education, specifically in the research area of industrial engineering.

An Instagram account (https://www.instagram.com/organizacion_de_empresas/) has been created in order to generate posts for education in the subject Business Organization, a common subject in different engineering degrees curricula, including mechanical engineering, electrical engineering, design engineering, architecture, etc.



Figure 2. Caption for the Instagram account @organizacion_de_empresas.

The purpose is threefold:

- 1 Theoretical learning, the student uses Instagram posts published by the teacher to learn pills of concepts;
- 2 Practical learning, the student uses the teacher's posts related with industry professionals, showing the application of theoretical concepts in real life;
- 3 Autonomous teaching-learning, the student develops the content and post of the Instagram account, with the supervision of the teacher.

At the end, the main aim is to provide knowledge of methods and quantitative tools to successfully address business management problems.

4 CONCLUSIONS

This article presents the Instagram app as an educational resource in the teaching-learning process, in the university environment. The objective is to improve this process through self-learning, developing Instagram pots from three different points of view that are distinguished by the different roles that the student acquires: (i) theoretical learning, the student uses the Instagram posts developed by the teacher to learn new concepts or consolidate concepts; (ii) practical learning, the student uses the Instagram posts developed by the teacher, interviewing industry professionals, in order to identify the application of theoretical concepts in real life; (iii) autonomous teaching-learning, the student develops the content of the Instagram posts and explains the theoretical and practical application of knowledge, acquiring a level of training that is compared to the role of teacher.

The article ends with the proposal to apply the Instagram posts as a pedagogical resource in the business management subject, characterized by being common in the study plans of engineering degrees.

The evaluation of the tasks will be rewarded by the student in the final grade for the course. For this, the following rubric is proposed to evaluate the student's Instagram posts at the autonomous teaching-learning level.

<i>Aspects</i>	<i>4 Excellent</i>	<i>3 Satisfactory</i>	<i>2 Improvable</i>	<i>1 Insufficient</i>
Content	It is expressed in an orderly manner, following a clear structure. The post begins with the antecedents and evolution, discusses the new models, the main characteristics, the tools and the advantages and disadvantages. Users are able to read the post in 2 minutes.	It is expressed in an orderly manner, following a clear structure	It is not expressed in a logical order in the narrative, although the ideas are clear.	There is no established order nor does it follow a logical structure. The content is confusing and unclear. The post is very difficult to read.
Content mastery	The content is clearly presented, from the objectives of the audio to the conclusions.	There are solid successes referred to the treatment of the contents; however, it could have been solved with better quality.	Some problems are observed in the domain of the content that the post deals with; however, there are some minimally accomplished elements.	There is a lot of confusion in the domain and in the exposure of the post content. In short, it does not offer a good opportunity to learn.
Interest	The post draws attention for the originality for which it has been created and is fun or interesting. Entertains the audience and maintains their interest.	Although it is not motivating because of the design with which it was created, it does hold the interest of the public.	It is interesting at various points in the post and the images, but not at all.	It does not meet any factor to make it interesting.
Format and quality	The post has an interesting title, an image has been inserted according to the topic discussed.	Meets one of the above criteria	Meets half of the above criteria	It does not meet any of the above criteria.
Expression and style	Writes with creativity and ease based on the script and without the help of the teacher or another classmate.	In general, writes with creativity and ease following the indications of the teacher or a classmate.	The writing and style is irregular and with some frequency he does not heed the indications of the script or the teacher.	It does not present expression or style

In future lines of research, the Instagram account will be accessible by everyone and all the students will start participating. In addition, the Instagram posts will be published in which a summary of the post, scientific bibliography that can be used and infographics will be made for a better understanding of the student.

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