Ciencias Jurídicas y Sociales

Universidad
Rey Juan Carlos
Servicio de Publicaciones

EXPERIENCIAS DE INNOVACIÓN EDUCATIVA APLICADA A LA FORMACIÓN DEL PROFESORADO

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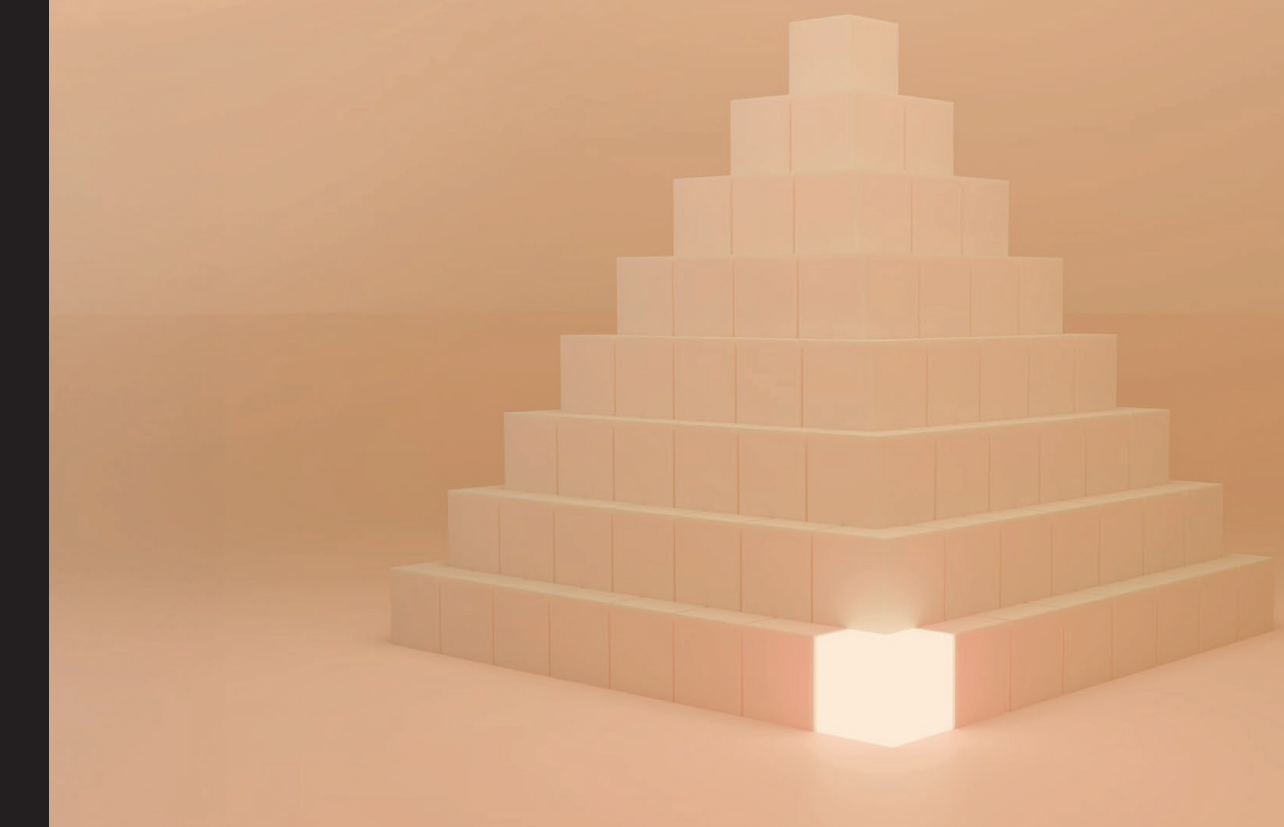
Editora



Experiencias de innovación educativa aplicada a la formación del profesorado

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ISBN: 978-84-1070-871-6
Depósito Legal: M-6892-2025
DOI: https://doi.org/10.14679/3517

ISBN electrónico: 979-13-7006-149-4

Maquetación:
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Smiles that teach: enhancing creativity and critical thinking through the utilization of memes. Classroom experience in two spanish universities

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DOI: https://doi.org/10.14679/3529

ABSTRACT

Working with memes created by the students themselves can be an effective way to engage them in the learning process. In response to this, the effectiveness of using them as an educational resource in the classroom has been explored. This initiative, carried out by teachers from two Spanish universities, aims to develop in students competencies related to synthesis, critical thinking, creativity, among others, and addresses the problem of providing an adequate response to the demand for education that promotes skills in an increasingly diverse and technological classroom environment. The objectives are to investigate how the use of memes can contribute to the development of these competencies and to raise awareness of their educational potential beyond mere humorous use. The methodology of working with students includes a theoretical part, followed by a more practical one (learning by doing), involving them in their creation, and concluding with a competition to evaluate the creations. The results show their effectiveness in promoting teaching competencies. Additionally, they promote an active learning approach, foster engagement, synthesis and understanding skills, effective communication, and adaptation to the digital culture.

INTRODUCTION

The transformation that the digital world is producing constitutes a challenge of adaptation that teachers must face. In fact, one of the great educational challenges lies in resolving how to educate and teach effectively in this complex digital culture. However, in this new global, digital, and hyperconnected world, education and educational innovation can present unprecedented possibilities for teachers to improve the teaching and learning process (Coll & Martí, 2001). The adaptation of a new teaching role as mediators or guides in the teaching-learning process is a real necessity and evidence (Baeten et al., 2013; Slavich & Zimbardo, 2012). The professionalization of teachers in both the conceptual and procedural knowledge dimension, as well as in competencies framed in educational values, is a priority in the intention to increase the quality of the process and results (Enkvist, 2016).

Educational dynamics cannot remain static or repetitive but must adapt to contemporary challenges. In this context, educational innovation must generate a constant renewal of strategies, resources, and tools to be used in the classroom. Likewise, students must abandon passivity and actively participate in the process. Following the perspective of UNESCO (2016), innovation encompasses significant changes in the educational process, including didactics, methodology, teaching roles, and student participation. These changes serve a dual purpose: to improve academic outcomes and stimulate the advancement of knowledge by promoting research and transforming pedagogical practices.

For this, it is fundamental that the teacher adopts a comprehensive vision that encompasses various interconnected components. These elements include:

- Knowledge: comprehending both disciplinary content and necessary cross-cutting skills. Continuous updating and adaptation to new trends are therefore essential.
- People: both teachers and students play crucial roles in educational innovation. Teachers must transform into facilitators, guides, and mediators of learning, while students should be active participants and collaborators in their own learning process.
- Processes: methodology, pedagogical strategies, and classroom dynamics are decisive for success. It is necessary to reconsider how teaching and learning occur, promoting creativity, critical thinking, and problem-solving.
- Technology: although not always indispensable, it can enhance educational innovation by providing tools for personalized learning, collaboration, and accessibility.

These elements do not exist in isolation, but rather intertwine and relate to the educational context. Furthermore, they must be aligned with pedagogical objectives

and the specific needs of students. Having a comprehensive vision involves considering them as an interdependent system that drives continuous improvement. Within this framework, this research presents an innovative experience based on the use of memes as an educational resource. Developed in the academic year 2023/2024, with students from two Spanish universities, the Rey Juan Carlos University and Cádiz University, it poses the challenge of creating educational memes with students enrolled in education degrees. The methodology, based on the learning-by-doing approach, aims to foster several key competencies for future teachers: primarily creativity, synthesis skills, and critical thinking.

OBJECTIVES

Main Objective

Analyze how the creation of memes boosts creativity, synthesis skills, and critical thinking, contributing to the development of socio-emotional abilities.

Specific Objectives

Assess the level of student participation and motivation through the use of memes as an educational resource in two different Spanish universities.

Investigate the educational potential of memes as a teaching resource for future teachers and professors.

Reflect on the challenges arising from the diversity of students' senses of humor, developing strategies to promote an environment of respect and mutual understanding.

THEORETICAL FRAMEWORK

Learning by Doing Methodology

The concept of learning by doing, pioneered by Schank (2002), is an approach that transcends traditional classrooms. Its essence lies in direct experience and real practice as the main drivers of knowledge. Instead of relying on lectures and

pure theory, it seeks the development of skills and abilities through action and experimentation in concrete situations (Fontela-Romero, 2022). This direct experience is essential for the learning process. Students actively engage in real-life situations, where they apply the knowledge and skills acquired, thereby enabling a deeper and more meaningful understanding of concepts (Fernández-Martínez et al., 2012). This approach not only entertains but also enriches the educational process and empowers future teachers.

Therefore, its use pairs well with active methodologies such as Problem-Based Learning (Llorente, 2013), Project-Based Learning, Collaborative Learning (Suarez-Álvarez, 2022), and Experiential Learning (Del Pino-Ordóñez, 2020). At its core, it acknowledges that learning is an active, social, and contextualized process. It unfolds when students interact with their environment, peers, and knowledge itself. But what makes it so powerful?

- Direct experience: Instead of mere theoretical expositions, it is based on direct experience. Students immerse themselves in real situations, applying what they have learned in authentic contexts. Thus, knowledge becomes rooted more deeply and meaningfully (Suárez et al., 2022).
- Strategic planning: To implement learning by doing, meticulous planning is required. Clear objectives, relevant content, challenging activities, appropriate resources, and constant evaluation are essential. The teacher acts as a guide, ensuring that each step contributes to learning.
- Transformed roles: The teacher ceases to be a mere transmitter of information (Nieva, 2016). They become a facilitator, guide, and mediator of learning. Their task is to empower students, providing them with tools and support, but also fostering interaction, dialogue, and cooperation among them.
- Reflection and continuous improvement: This approach stimulates reflection and self-assessment for both current teachers (Gómez, 2019) and those in training. Students learn from their mistakes and successes, thereby improving their performance. Each challenge becomes an opportunity for growth.

This approach, which appears to play an important role in achieving competencies within the new framework of university teaching (Fernández-Martínez et al., 2012; Knowles and Suh, 2005; Garrido-Abia and Marcos-Calvo, 2021), is not limited to a specific educational context but extends as a bridge, or point of connection, between theory and practice in various disciplines. However, its application is particularly suitable in those that require active, experimental, and reflective learning. By way of example:

- Science disciplines: In scientific fields such as biology, chemistry, or physics, methodologies based on this approach come to life. Students not only memorize concepts but also conduct experiments, observe natural phenomena, and apply

scientific methods (Samaniego, 2007). Direct interaction with the real world enhances their understanding and scientific curiosity.

- Arts: In music, visual arts, or theater, students not only study techniques but also compose, paint, act, and immerse themselves in artistic expression (Mahmut, 2021).
- Communication: Students can participate in simulations of real-life situations, such as press conferences, public relations crises, or business negotiations. Through practice, they develop effective communication skills and decision-making abilities. Similarly, they can design and execute advertising campaigns, fictitious or real. From conceptualization to implementation, this experience allows them to apply communication theories and assess their impact (Alcaide-Pulido et al., 2023).
- Language and literature: In various applications, such as creative writing workshops, students can write their own stories, poems, or essays instead of just analyzing literary works. In this way, constant practice improves their written expression and understanding of literary techniques. Similarly, in theatrical techniques, they can adapt literary works for the stage or create their own scenes.
- Education: As in the case of the present study, education itself benefits from its use. Future teachers not only study "pedagogical theories" but also design their own materials while learning and reflecting on their practice, preparing them for the real classroom.

In conclusion, the implementation of this approach in the educational sphere transcends disciplinary boundaries by empowering students to take an active role in their learning process. By acting as a catalyst for creativity and critical thinking, it guides towards a more substantive and transformative education.

THE EDUCATIONAL POTENTIAL OF MEMES

In the context of education, memes emerge as an innovative tool that not only entertains but also stimulates reflection and creative expression. For years, they have constituted a cultural phenomenon that has spread widely thanks to the internet, leveraging the possibilities offered by digital technologies. They can take the form of images, videos, or texts that spread massively and swiftly across the web, and their purpose is generally humorous or satirical (Gagliardi, 2022). They reflect the opinion, feeling, or attitude of those who create or share them. Their distinctive characteristic lies in their communication capability, potential for virality, and adaptability to different contexts and situations, and they may contain critiques or comments on various aspects of social, political, or cultural reality.

Due to their format, they are capable of conveying complex, ironic, or subversive messages in a simple, fun, and visual way, making them an attractive and contagious tool for Internet users. Furthermore, they are highly adaptable, as they can be modified, combined, or reinterpreted according to the circumstances, interests, or intentions of their creators or recipients. In summary, they constitute a form of expression, participation, and interaction that reflects the culture and society of the digital era.

In the educational realm, they have been explored in various contexts (Beltrán-Pellicer, 2016; Ligarretto, 2020; García-Martínez, 2021). They constitute a valuable pedagogical resource, as they allow students to express ideas and concepts visually, ironically, and succinctly. Additionally, this expression can be carried out through simple and accessible digital tools. By fostering creativity and critical thinking, memes become allies for future primary school teachers, providing them with an innovative avenue to address content and stimulate learning.

For students to understand the potential of memes as an educational resource, it is not enough for them to passively observe or consume them; they must actively engage in their creation and dissemination (Suárez-Guerrero et al., 2022). By assuming this active role, they become proactive agents of their own learning process. Furthermore, this participation allows them to develop essential skills, such as synthesis, creativity, critical thinking, and communication (Chicaiza and Bastardo, 2022). Essentially, this methodology aligns with the learning by doing approach, which, as discussed in the previous point, posits that learning is nourished through practical experience and direct action and is strengthened through reflection and feedback.

METHOD

Research Design

The study is exploratory in nature and has been conducted at two Spanish universities, namely, Rey Juan Carlos University located in Madrid, Spain (hereinafter referred to as URJC) and Cádiz University, situated in Cádiz (hereinafter referred to as UCA). Specifically, it involves students enrolled during the academic year 2023/2024 in the Bachelor's degrees in Primary Education, Double Degree in Primary and Infant Education, and Master's in Teacher Training. The sampling method is non-probabilistic convenience sampling, as the three authors of this research work, based on the application of innovation in the classroom, teach in these three degree programs. The methodology applied is mixed with a descriptive

quantitative approach and a qualitative one, using participant observation as the data collection technique.

Phases of the Didactic Methodology

The implementation of this intervention, focused on the application of innovation in the classroom with the purpose of promoting a didactic teaching and learning situation, considering memes as the main pedagogical tool, has been carried out in 5 phases:

- Introduction, objectives, and examples: This phase lasts approximately 30-45 minutes. The proposal is presented under the title "Memes as a didactic strategy in the classroom," with explanatory development mainly through a lecture, but with constant participation by asking students questions about their understanding of what a meme is, what types of memes exist, objectives and purposes, etc. Each slide presented along with the information includes an average of 6 examples of educational memes.
- Analysis of educational potential: This phase begins by asking students what potential they consider the creation of memes to have. They are then guided to reflect on its possibilities mainly for the development of creativity, critical thinking, and communicative synthesis, as well as working with humor and a positive classroom atmosphere (Velayos-Martín and García-Lázaro, 2022). Finally, three research articles on this topic are provided for students to work on in groups and obtain more valuable academic information.
- How do we do it. Tools for it: Students are presented with information on different tools through four web links, both for smartphones and computers, as well as a link to a YouTube tutorial on how to create memes with MemeGenerator and MakeaMeme.
- Let's get to work. Let's create!: In this phase, students are motivated by being given total freedom to create memes with the approach they want, although of course always related to education. Similarly, they are given the freedom to create them using images of any type or videos and to create as many as they want. Finally, examples of memes created by students in the previous course, where the proposal began, are shown as the first pilot test.
- Contest: A specific day is set for the evaluation of the memes. To avoid hurting susceptibilities during the contest phase, numerical grades were not established. Instead, an application was sought that allowed choosing the voting method and guaranteed the anonymity of the votes; the chosen application was PollUnit. Voting is done by distributing stars up to a maximum of five, not only aiming

for the image with the most votes but also the one with the most stars. This way, different categories were established, and the possibility of having more than one winner was offered. This strategy allowed for a more nuanced and equitable evaluation of the memes created by students.

Sample

The participating students in this study (see Table 1). The research was carried out with students from three different degree programs: those enrolled in the Master's in Teacher Training for Secondary Education, Baccalaureate, Vocational Training, and Languages at URJC, representing 15% of the sample. The Bachelor's and Double Bachelor's degree students in Primary Education represent nearly 45% in the case of URJC and almost 40% of the sample for UCA (n=179). The non-probabilistic sampling conducted is by convenience (Bisquerra, 2004). Regarding gender, female participants predominate (70%) compared to males.,

Table 1. Participation and meme creation results of students from the Rey Juan Carlos University

	Enrrolled Students	**Participants**	
Teacher Training Master's Program	28	16	URJC
Bachelor's and Double Bachelor's Degree in Primary Education	80	76	
Bachelor's Degree in Primary Education	71	71	UCA

RESULTS

Firstly (see Table 2), the participation results of Rey Juan Carlos University are presented, along with the total count of memes created by the involved students. It is important to note that, unlike UCA, at URJC, the activity was proposed on a voluntary basis, meaning it was not part of any course evaluation criteria.

Table 2. Participation and meme creation results of students from Rey Juan Carlos University

	Participation percentage	Memes
Teacher Training Master's Program	82%	42
Bachelor's and Double Bachelor's Degree in Primary Education	95%	57

Students from the Master's in Teacher Training, who had previously had the opportunity to explore creativity through various activities conducted in the classroom, showed particular enthusiasm for the proposal from the outset. Participation in the meme contest was high, with 82% of the total students actively engaging, demonstrating a significant level of commitment and interest. Additionally, all students participated in the online voting process.

Similarly, students enrolled in the Bachelor's in Primary Education and Double Degree programs embraced the challenge with enthusiasm, mirroring the engagement seen in the Master's students, with a voluntary participation rate of 95%, which is considered quite high in this context.

Across all three programs, attendance during the meme projection and contest session in class was widespread, with all attending students participating in the voting process. This phase fostered a notable atmosphere of motivation and enjoyment among the students.

Next, the percentage results of student participation from the University of Cadiz are presented, along with the total number of memes created by the students. However, in this case, the meme creation activity accounts for a percentage of the course grade.

Table 3. Participation and meme creation results of students from Cádiz Univerity

	Participation percentage	Memes
Bachelor's Degree in Primary Education	100%	268

In this case, given that it was an assessable activity, participation reached 100%. For the majority of students, the proposal was initially perceived as complex, with some even feeling overwhelmed at the start. However, a significant number of students showed remarkable proactivity, quickly starting to create memes and share them privately within the class WhatsApp group. This spurred motivation among the rest of the students. The group-based nature of the activity encouraged cooperation among them, even among groups without any reservations about sharing information.

Lastly, reflecting on the experience at both universities, integrating humor through memes allowed students to approach learning in a more relaxed and engaging manner, thus enhancing their commitment to the activity. Furthermore, the prominent role assigned to them in meme creation and the final contest phase was perceived as a motivating challenge for the students. The development of creativity, critical thinking, and synthesis skills were evident outcomes of meme creation. Notably, a positive, cooperative atmosphere was observed among the students.

CONCLUSIONS

The creation of memes is inherently a creative exercise. Students must generate ideas, select appropriate images, and formulate texts that are both informative and humorous. This process can help them develop and enhance their creative skills. Additionally, due to their nature, memes require creators to condense an idea or concept into an image and a few words, forcing them to synthesize information in a way that is easily understandable and engaging. In this study, it was observed that meme creation fostered students' creativity, enhancing their self-perception of creative abilities and stimulating their expression of ideas and concepts.

Regarding the classroom atmosphere, the introduction of a playful and creative activity like this has had a positive impact by generating laughter and fostering a more relaxed and enjoyable learning environment. Additionally, students indicate that the possibility of participating in a final contest has increased their motivation to engage. In this trial, the memes created by students reflected their ability to summarize information in a simple and humorous way, fostering synthesis skills. They also proved to be a useful tool for promoting critical thinking. Students had to analyze and reflect on curricular content to generate relevant and meaningful memes. This process allowed them to develop a deeper understanding of the content and apply their knowledge creatively.

Furthermore, the activity promoted the development of socio-emotional skills. Students had to work together to generate and vote on memes, allowing them to practice skills such as collaboration, empathy, and respect for others' ideas and perspectives. Regarding the use of technological tools, students found platforms like Canva, Imgflip, Meme Generator Free, and Memasik easy to use and efficient for generating memes. The use of Padlet and Artstep for collaboration and Pollunit for voting was also well received.

It is evident that, as with all experiences, we also encountered obstacles to overcome and challenges. Before starting the contest phase, some memes, due to their particular characteristics, responded to a very specific type of humor that was

not always understood by all classmates, with some receiving hardly any votes. All this highlights the importance of the teacher's role in managing these situations appropriately, preventing some students from experiencing a sense of failure. On the contrary, they must all understand the great diversity of different creative expressions while being aware of the importance of maintaining an atmosphere of respect for diversity and mutual appreciation.

Regarding future lines of work, we want to explore the use of memes to specifically address curricular content, extending to other subjects that are not specifically related to education. Therefore, in the coming years, we have expanded its scope with the intention of using them to consolidate knowledge acquired in curricular content, which will also promote the acquisition of key concepts and improve the learning process in a more motivating environment. Working on curricular content through this resource can be an excellent idea for several reasons, for example:

It helps with better understanding, with more meaningful learning: to create a meme that reflects a concept from the subject, students must have a deep understanding of that concept. This forces them to study and truly understand the content of the subject.

Information synthesis: memes require students to condense an idea or concept into an image and a few words, which helps them better understand the material and can facilitate information retention by highlighting its key points.

As a closing remark of this experience, the use of memes for educational purposes proves to be a valuable tool for teachers who wish to harness their potential for visual communication through humor and, at the same time, can perform various functions in the classroom. On one hand, they stimulate critical thinking by requiring students to analyze and evaluate the context and message behind each image. On the other hand, they foster creativity by allowing students to express their ideas in a witty and original manner. They also contribute to the development of socio-emotional skills by promoting empathy, understanding, and mutual appreciation among peers, presenting themselves as an effective and engaging way to involve students in the learning process.

ACKNOWLEDGMENTS

This research would not have been possible without the involvement of the students from URJC and UCA. The pilot version of the research emerges from the collaboration among several teachers from the Mathematics Education area and the Recognized Teaching Innovation Group Creating Connections, Innovation, and Neuroeducation (CREATIN) at URJC, along with a faculty member from the Department of Didactics and School Organization at UCA, where this experience

was developed within the framework of the Educational Innovation and Research subject of the Primary Education Degree.

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