Universidad Pablo de Olavide (España)
International Journal of Educational Research and Innovation
número 21, 2024
ISSN: 2386-4303
DOI: 10.46661/ijeri.8878
Sección: ARTÍCULOS
Recibido: 27-10-2023
Aceptado: 02-11-2024
Publicado: 30-06-2024
Páginas: 1-19

INTERNATIONAL JOURNAL OF EDUCATIONAL RESEARCH AND INNOVATION
REVISTA INTERNACIONAL DE INVESTIGACIÓN E INNOVACIÓN EDUCATIVA

Una revisión sistemática sobre la comunicación en la gamificación educativa: nuevos enfoques de investigación

A systematic review on communication in educative gamification: new research approaches

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RESUMEN

Los autores de esta investigación exponen un estudio sobre la gamificación y los procesos de comunicación generados en diferentes contextos educativos. A través de una revisión sistemática, este trabajo descriptivo analiza un total de 80 artículos presentes en Web of Science (WoS) y SCOPUS siguiendo los criterios establecidos por el protocolo PRISMA. Los resultados muestran que la temática de estudio de investigación se encuentra en una etapa inicial, desprendiéndose cuatro bloques temáticos: motivación, experiencia, comunicación y mejora de habilidades. El valor de esta investigación radica en ofrecer una visión crítica basada en el desarrollo de un análisis en profundidad de la producción existente entre la gamificación y la comunicación en el ámbito educativo hasta la actualidad.

PALABRAS CLAVE

Comunicación; gamificación; Educación Superior; TIC.

ABSTRACT

The authors of this research paper hand in a study on Gamification and the communication processes generated in different educational contexts through a systematic review. This descriptive research analyses a total of 80 results present

Cómo citar: Lafarga Ostáriz, P., Soler Costa, R., del Barrio Aranda, L., & Cáceres Reche, M. del P. (2024) Una revisión sistemática sobre la comunicación en la gami-ficación educativa: nuevos enfoques de investigación. IJERI: International Journal of Educational Research and Innovation, (21). https://doi.org/10.46661/

in Web Of Science and SCOPUS, with the criteria established by the PRISMA protocol. The results show an initial stage of research on the topic. Four blocks of aspects are apparent: motivation, experience,

communication, and skills improvements. The value of this research lies on offering a critical view based on an in-depth analysis of the existing scientific production between gamification and communication in education.

KEYWORDS

Communication; gamification; higher education; ICT.

INTRODUCTION

Technological development during the first two decades of the 21st century has generated disruptive changes in society. The progress and incorporation of digital technology have generated a new paradigm in which human beings are progressively adapting to new ways of learning, communicating, and relating to others (Demidov et al., 2020). The apogee of Information and Communication Technologies (ICTs) has made them become the backbone of a substantial modification of everyday habits. Computers, smartphones, or objects associated with the Internet of Things (IoT) are in a constant process of improvement which, in turn, increases their demand in everyday life (Shmakova, 2021). All this is leading to the structuring of new needs, different from previous centuries, for a society oriented towards hybrid contexts such as those experienced during the SARS-Cov2 pandemic (Lorente et al., 2020).

The development and establishment of new habits is nothing new. However, it is new when it is ICTs that are shaping new ways of being, being, and living. Proof of this is the appearance of new pathologies, such as the fear of not having a smartphone (Rodríguez et al., 2020), clearly associated with the relevance given to resources whose status is on a par with that of a wallet or house keys. An evolution that has increased an intergenerational divide (Zanotti & Grasso, 2020), in addition to the digital divide itself (Asongu & Odhiambo, 2019), in which different aspects of daily life have been forcibly transferred to digital contexts: working, shopping, communicating, etc. These goods, fully established in the first world, limit life to a few centimeters that are fundamental for the integral development of any person, regardless of their age.

The new alternatives that have appeared thanks to these new media mean new ways of life for children, adults, and the elderly (Vaterlaus et al., 2021). Smartphones are the tip of an iceberg whose influence is evident in almost all areas (Torres et al., 2021): health, education, food, leisure, social, work, etc. This also calls for reflection, as society's preparation and training for them is not regular and constant. Children, who are also not excluded from the revolution, internalize patterns of use from a very early age (Siepmann & Kowalczuk, 2021). Adults and the elderly are immersed in a constant stage of change in which this use is being imposed on them, thus generating numerous problems. In the same way that the new generations do not know what a cassette is, this gap is the reverse when it is the novelties that govern everyday life.

The transition to digital is a reality, as the pandemic has shown (Alba, 2021). This evolution represents a clear before and after for humanity, as this change also entails the emergence of new patterns and behaviors in non-physical domains (Soler et al., 2021). This has manifested itself in educational processes such as those that occurred in Spain during the period of home confinement, with ICTs being conceived as a key channel for human interaction. A one-off phenomenon due to the presence of SARS-Cov2 but whose transcendence has already been on the rise in recent years. And the most relevant aspect of this phenomenon is to think about it from the present to the future since reflection on the new personal development needs that will be associated with ICTs is key knowledge.

The educational environment, as an agent and direct patient, is also undergoing a key process of readaptation for the integral education of its members. Following the situation derived

from the pandemic, didactics has experienced new paradigms under which ICTs have become more than just resources. While it is true that the teaching-learning process

allows for remarkable flexibility, it must be considered how technology has been incorporated up to the present day. The brevity of time in which we have gone from overhead projectors to systems such as Massive Open Online Courses (MOOCs) (Liu et al., 2020) or Virtual Reality (VR) (Pascagaza & Estrada, 2020) is difficult to assimilate. It is clear that the educational process is also undergoing a transversal paradigm shift, as evidenced by the fact that smartphones have led to the emergence of methodologies such as mobile learning (Kerzic et al., 2021).

One of the methodologies that have seen the greatest growth over the last five years has been gamification (Jinu & Beegum, 2019), especially that based on ICTs as a channel for the process. This strategy has been incorporated into the teaching-learning processes due to a greater demand for gamified content, especially on tablets and smartphones. Its adaptability to ICTs is such that proposals related to its integration in Virtual Reality are already being developed (Osipov et al., 2016; Reitz et al., 2016; Cavalcanti et al., 2021). All this is due to the nature of a system supported by points, levels, challenges, missions, and competitiveness consistent with their everyday environments (Bicen & Kocakoyun, 2020; Bilro et al., 2021). In fact, especially due to the pandemic, its application has been very common with flipped learning methodologies (Durao et al., 2020) or mobile learning (Gunduz & Akkoyunlu, 2020).

Variations that respond to new consumer habits. It highlights the context of new generations constantly immersed in a sea of technological change, a fact that is having an impact on their development (Capasso & Mark, 2021). The specific case of smartphones symbolises the new hybrid environments of their daily lives. How they access information has changed, increasing risks such as fake news (Nwankwo & Njoku, 2020), and how they relate to other people, with the problem of cyber-bullying being notable (Goncalves & Vaz, 2021). Patterns that allow us to anticipate the increasing importance that ICTs will have on children, young people and adults who are native ICT users. This has a clear influence on the educational context, an environment whose changing nature prevents it from being oblivious to the socio-economic modifications of its agents.

This is also the case for teachers, who are finding it more difficult to access ICTs for temporary reasons (Tinmaz & Ozturk, 2019). Adults who, to a greater or lesser extent, have also grown up in a system increasingly marked by technology. In fact, the digital boom has stimulated debates on the very nature of their profession, establishing nuances such as the change from being the only means of information to being channellers of knowledge in the classroom (Masoumi, 2020). Consequences of the integration of ICTs in the classroom are supported by legislative nuances, the main policy in this area in Spain being the Organic Law on Education (LOE). In this sense, the LOE, published in 2006, laid the foundations for educational competence approaches and was the precursor of the so-called Digital Competence (DC) (de Arruda & Nascimiento, 2021). The current legislation, the Organic Law for the Improvement of Educational Quality (LOMCE) of 2013, maintains these approaches.

The birth and establishment of CD shows how new social needs are emerging that have a direct impact on the educational participants, students and teachers. This approach, based on the integral technological development of the person, is also in a constant process of natural conceptualisation (Gomez, 2020), which makes it difficult to make it concrete. Proof of this is the evolution of devices incorporated into teaching practices, with some currently being considered, such as Big Data (Terron et al., 2020) or Maker spaces (Lindberg et al., 2020). Mirror and reflection of a complex and booming digital education (Martinez & Toscano, 2021). A new technological culture that converges through the different educational agents in aptitudinal and attitudinal competences. All of this has developed in symbiotic contexts between people and technological media that have strongly altered inside and outside the classroom.

As the possibilities of ICTs have increased, new digital risks have also appeared and increased. Beyond a clear digital divide in terms of access and use, the rise of devices such as smartphones has facilitated a democratisation of information that also has its disadvantages. The so-called Fake News, whose approach is well known although its conceptualisation remains complex (Shapalova, 2020), is a clear example of the evolution

of knowledge in this 21st century supported by the Internet and social networks (Pascagaza & Estrada, 2020). The proliferation of media and information channels brings with it a new capacity to sift through ideologies or approaches based on the dissemination of fear or hatred (Tam et al., 2021). A problem that may be a conditioning factor in the election of presidents in countries such as the United States (Paglinawan, 2020).

In the same way, democratisation, especially the availability of devices or accounts on networks/platforms, has led to an increase in phenomena such as cyber-bullying or fraud. These are two clear examples of the breadth of CD (Gonzalez et al., 2020), incorporating nuances and training that go beyond technical issues and the use of technology. Cyber- bullying, a more common trend among young people (Alvarez et al., 2019), involves the transfer of poorly developed guidelines and rules of behaviour to the digital world. A regulation whose definition is difficult to define in the face of the increase in technological resources, with the coining of the term netiquette at the end of the 20th century also being relevant. Fraud, in this case more associated with the adult population, is another of the problems that are becoming established in digital routines (Lim et al., 2020). Another pattern that supports the formative globality of CD.

Under these new social and educational paradigms, the communicative process acquires greater relevance (Forkosh & Avidov, 2020; Spates, 2021). It is especially important in educational contexts, institutions where ICTs are altering the relationship between elements by modifying the channel through which the message is emitted (Hsiu & His-Hsun, 2020; Mielikainen, 2021). It is even more valuable if we consider the natural bidirectional nature of the teaching-learning processes, with the sender and receiver being two people with different cognitive levels. For this reason, communication, verbal and non-verbal, is of such substantial importance that it is necessary to reflect on and investigate the new needs that have emerged. The search for the integral development of the learner cannot ignore an innate, hybrid and essential capacity (Candel & Agustin, 2020; Torres, 2022). The communicative guidelines and norms that will be necessary for them inside and outside the school institution must be taken into account.

This study is proposed in view of this new paradigm. Incorporating gamified methodologies, especially those supported by ICT tools, involves altering a fundamental communicative process in the educational context. For this reason, it is necessary to understand how communication is consibe when gamification strategies are applied in the classroom, focusing in this case on the existing literature to date. Its relevance is understood due to the clear interest of the educational field in incorporating ICTs and this requires global considerations that facilitate the integral development of students (Veltsos, 2017). Gamification and communication cannot be separate factors (Goodman et al., 2015; Carnicer et al., 2019), application without reconsideration. This paper focuses on exposing the existing scientific reality between these terms, gamification and communication, in the main databases. It is an approach that allows us to know, and help us to understand, the current state of consideration of communication in educational environments based on gamification.

METHOD

This systematic review was based on the analysis of the existing literature in SCOPUS and Web of Science (WoS), two of the world's leading scientific databases, on the interrelationship between communication and gamification in the field of education. Its development has been carried out according to the Preferred Reporting Items for Systematic Reviews (PRISMA) (Moher et al., 2009), with the aim of answering the questions posed below. Similarly, the structure of other publications in impact journals (Lopez et al., 2019; Jurado et al., 2020) has been

taken into account in order to follow analysis models validated by experts. In turn, the data of the studies analysed are included, including: country of origin, date of publication, main objectives, methodological design, variables considered, size and details of the samples and their respective scientific contributions to the area investigated. RQ1 What is the state of scientific production regarding communication in gamified educational processes?

RQ2 Has the interest in communication and gamification increased in the last decade? RQ3 Do the various studies show a relationship between communication and gamification?

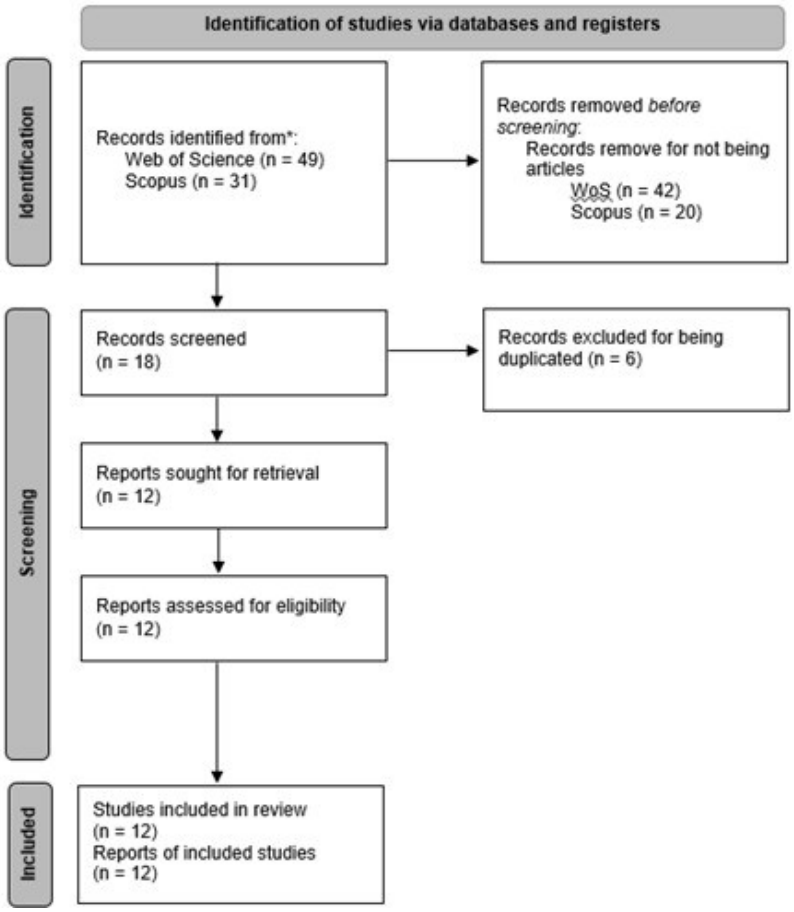
Search strategy

During the months of January and February 2022, an in-depth search on the relevance of communication in gamified educational contexts was carried out. Due to the nature of the present research, the work was established through an extended search by terms in the SCOPUS and WoS databases. The choice of both databases was determined by their scientific relevance (Asknes & Sivertsen, 2019). The search, after defining the search terms "communication" and "gamification", was carried out by combining these terms together with the logical operator AND. Both keywords were selected as their interaction summarises the scientific interest of this research. The search was based on English, due to the international character of the databases used. This initial search yielded 80 files, although the final sample consisted of 12 references.

Inclusion criteria

The PRISMA protocol (Moher et al., 2009) served as a channel for obtaining the final sample, a scientific strategy used in view of its specific design for conducting systematic reviews. The main objective was to analyze those articles focused on communication and its relevance in gamified educational processes, which is why such a restrictive search criterion was established. Subsequently, those results that were not articles were eliminated, both in WoS (n= 42) and in the SCOPUS database (n= 20). Of the remaining 18 articles, duplicates were removed as they were part of both databases (n= 6). Once deleted, the availability and information contained in the remaining 12 articles were analyzed to check their eligibility. Finally, the 12 articles remained as the final reduced sample (Figure 1). All of them are articles that incorporate the terms "communication" and "gamification" in their title, are not repeated in both databases and their text was accessible in full.

Figure 1. Flowchart of the PRISMA Ssytematic Review on communication and gamification.



FINDINGS

This section presents the analyses of the articles that, after going through the PRISMA methodology, have formed part of this systematic review. In order to facilitate their understanding, an organization has been developed by means of different variables, a total of 9, which will be developed in their respective sections. At the same time, it is worth highlighting the presentation through two main tables, Table A1 and Table A2, a strategy considered in view of the diversity of scientific approaches found. In this way, all those articles that have worked with empirical approaches are included in Table A1 and those that are more theoretical in Table A2. At the same time, the clear preference for mixed methodologies (n= 6) over strategies of a quantitative (n= 1) or qualitative (n= 2) nature should be noted, all of which are included in Table A1.

Country

The nationalities of the authors of the papers analyzed totalled 7 countries, including one article incorporating authors from three different countries (Osipov et al., 2016). The largest presence is in the United States (n=4), with 3 articles being single-authored (Goodman et al., 2015; Veltsos, 2017; Spates, 2021), and Spain (Carnicer et al., 2019; Cavalcanti et al., 2021). In the remaining articles, there is no repetition of origin, with the different papers coming from countries such as Cuba (Martinez & Toscano, 2021), Portugal (Bilro et al., 2021), Cyprus (Bicen & Kocakoyun, 2020), Taiwan (Hsiu & His-Hsun, 2020), India (Jinu & Beegum, 2019), and Germany (Reitz et al., 2016). If we consider the distribution by continent, Europe contributes half of the papers, up to five come from North America and two from Asia.

Language

Almost all the articles considered for analysis and inclusion in this systematic review are written in English, with only one case written in Spanish (Martinez & Toscano, 2021). This fact shows the marked international character of the databases considered and the independence of the country of publication with respect to the language of publication.

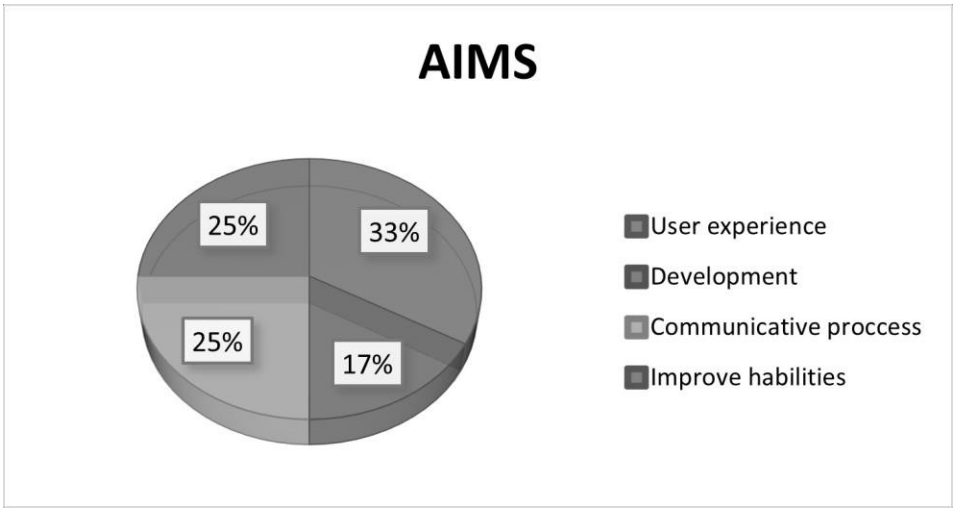
Dates

All the articles analyzed are included from 2015 (Goodman et al., 2015) to 2021 (Cavalcanti et al., 2021; Bilro et al., 2021; Martinez & Toscano, 2021; Spates, 2021), except for 2018, for which no research has been included in this study. Although the numbers are limited, a certain positive trend and settlement can be seen from 2019 (n=2), maintaining the numbers in 2020 and doubling (n=4) in 2021.

Objectives

Although there are different approaches and developments, four objectives can be defined that encompass the hypotheses of the works analyzed: user experience analysis, analysis of communicative processes, developments, and skills improvement (Figure 2). The analysis of the user experience (Goodman et al., 2015; Reitz et al., 2016; Cavalcanti et al., 2021; Bilro et al., 2021) shows a clear interest in understanding the process experienced by the user when using gamified processes and is more oriented towards technological issues. There are several studies that analyze and focus their efforts on communicative processes and how they are produced or altered when gamification is applied (Veltsos, 2017; Bicen & Kocakoyun, 2020; Hsiu & His-Hsun, 2020). There are developmental approaches, but they are encompassed in social (Spates, 2021) or technological theories (Carnicer et al., 2019). Finally, the willingness to improve skills as a final gain (Osipov et al., 2016; Jinu & Beegum, 2019; Martinez & Toscano, 2021) stands out.

Figure 2. Main objectives of the articles analysed in Web of Science and SCOPUS.



Methodological design

As specified at the beginning of this section, two clear methodological designs emerge empirical articles (n= 9) and theoretical articles (n= 3). In the first case, there is a clear predisposition towards mixed approaches, as opposed to those that rely solely on quantitative (Cavalcanti et al., 2021) or qualitative strategies (Bilro et al., 2021; Spates, 2021). In relation to those who are more theoretical (n=3), in all cases, their approach is developed through documentary analysis and document review (Goodman et al., 2015; Veltsos, 2017; Martinez & Toscano, 2021).

Sample

From the articles analyzed, it can be seen that the priority object of study is the student body (Jinu & Beegum, 2019; Carnicer et al., 2019; Hsiu & His-Hsun, 2020; Bilro et al., 2021; Spates, 2021), although there is a notable disparity in terms of ages and educational stages. There are also differences in the size of the sample, with sample sizes ranging from 30 (Jinu & Beegum, 2019) to 416 people (Carnicer et al., 2019), including figures close to 100 (Hsiu & Hsi-Hsun, 2020; Bilro et al., 2021) or undefined (Spates, 2021). The remaining works are very varied as they focus on different profiles: volunteers (Cavalcanti et al., 2021), parents (Bicen & Kocakoyun, 2020), generic users (Osipov et al., 2016), or populations between 12 and 24 years old (Reitz et al., 2016).

Variables

The variables analyzed by the articles included in this paper are diverse. The empirical methodological approaches are based on four main concepts: interaction, experience, motivation, and communication. Interaction is encompassed within the gamified process (Reitz et al., 2016; Hsiu & Hsi-Hsun, 2020; Cavalcanti et al., 2021; Bilro et al., 2021), experience is oriented towards how the user feels when applying gamified processes (Jinu & Beegum, 2019; Hsiu & Hsi-Hsun, 2020; Cavalcanti et al., 2021;), motivation is understood as the impact of applying gamification in educational contexts (Reitz et al., 2016; Bicen & Kocakoyun, 2020; Spates, 2021; Bilro et al., 2021) and communication as a relevant issue when applying strategies supported by gamification (Reitz et al., 2016; Jinu & Beegum, 2019; Bicen & Kocakoyun, 2020; Spates, 2021). At the same time, other types of variables have also been found, more oriented towards technological habits (Osipov et al., 2016; Carnicer et al., 2019). The theoretical articles do not provide specific analyses or considerations of variables (Goodman et al., 2015; Veltsos, 2017; Martinez & Toscano, 2021).

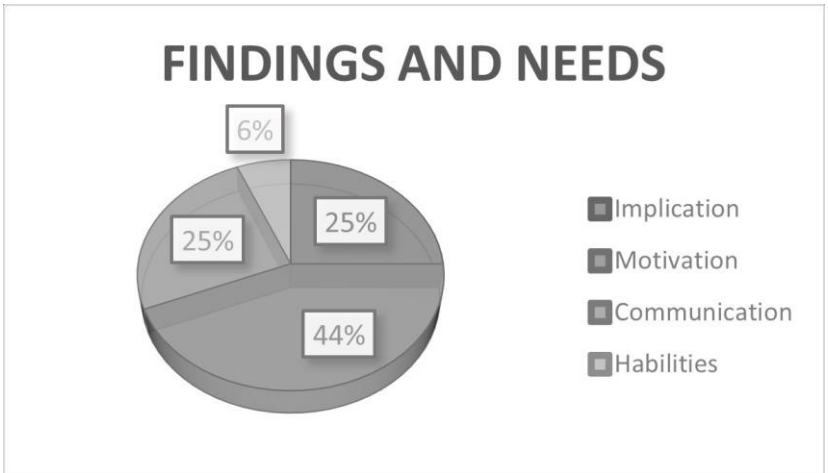
Instruments

The instruments used in the analysed articles cover quantitative, mixed and qualitative perspectives. Articles with mixed or quantitative approaches have relied on the development of ad-hoc questionnaires, while those with more qualitative or mixed approaches have relied on focus groups (Spates, 2021) or semi-structured interviews (Bicen & Kocakoyun, 2020). In some cases, specific applications (Carnicer et al., 2019) or other technological tools (Osipov et al., 2016) have been developed and used.

Main findings

The main results synthesised from the articles can be categorised into four blocks (Figure 3): engagement (n= 4), satisfaction (n= 6), communication (n= 4) and skills improvement (n= 1). The application of strategies based on gamification supports improvements in terms of involvement, especially in cases of students of different ages, satisfaction also derived from including methodologies of this type is also increased in a transversal way, communicative processes are altered in the application of these educational techniques and some differences can be seen in their incorporation and use; and in some cases gamification favours the improvement of specific skills such as keyboarding (Jinu & Beegum, 2019). Other assessments are also highlighted, such as the negative repercussions of gamification in social networks and its association with marketing (Goodman et al., 2015).

Figure 3. The main results of the articles analysed in Web of Science and SCOPUS.



DISCUSSION

Recent years have highlighted the development of society through ICTs (Demidov et al., 2020). This is a trend whose growth has been exponential over the last decade, largely due to smartphones, and forecasts predict an even greater presence (Capasso & Mark, 2021). A new reality in which human development is beginning to differ significantly from previous eras, and this is especially relevant in the case of the new generations. The way they access information, carry out routine activities or interact socially is shifting towards hybrid environments (Candel & Agustin, 2020; Vaterlaus et al., 2021;). The same is true for older people, with the nuance that they have experienced the integration of ICTs not from the day they were born and fully grown. This translates into a gap that, like that of access to technology (Zanotti & Grasso, 2020), is evident in older ages (Shapalova, 2020; Paglinawan, 2020; Gonzalez et al., 2020; Tam et al., 2021) and how they have to use smartphones for previously analogue tasks (Alba, 2021).

Education is not exempt from this new technological paradigm (Liu et al., 2020; Pascagaza & Estrada, 2020; Kerzic et al., 2021). In the specific case of Spain, there are numerous proposals for the integration of ICTs, which have been legislative in nature since 2006 to the present day. A strategy that has been in place for more than a decade and which, in general, has resulted in the supplanting of analogue tools and not so much in transversal didactic changes. This discrepancy has accentuated scientific interest in training aspects, with CD and DCT becoming two important lines of research (de Arruda & Nascimiento, 2021). In this sense, gamification (Jinu & Beegum, 2019), supported by ICTs (Osipov et al., 2016; Reitz et al., 2016), emerges as a pillar of research due to its transversal nature and its direct connection with competitive social habits (Durao et al., 2020). An approach to change that also demands a revision of the educational communication process by providing an alternative to the classic channel. This translates, at least in theory, into the revision of guidelines and rules for the treatment of the message (Soler et al., 2021).

The analysis of the articles compiled through Web of Science and Scopus, with the final sample consisting of 12, being the only ones to pass the inclusion criteria used during the analysis through the PRISMA methodology (Moher et al., 2009), allows the development of several inferences. Europe (Reitz et al., 2016; Osipov et al., 2016; Carnicer et al., 2019; Bicen & Kocakoyun, 2020; Cavalcanti et al., 2021; Bilro et al., 2021) and North America (Goodman et al., 2015; Osipov et al., 2016; Veltsos, 2017; Martinez & Toscano, 2021; Spates, 2021) accumulate the production on the subject, with almost all the works developed in English. The date of origin of research in this field is 2015 (Goodman et al., 2015), inferring an exploratory phase with a positive quantitative trend (n= 4). In this sense, four axes of enquiry stand out: user experience analysis (Goodman et al., 2015; Reitz et al., 2016;

Cavalcanti et al., 2021; Bilro et al., 2021), analysis of communicative processes (Veltsos, 2017; Bicen & Kocakoyun, 2020; Hsiu & His-Hsun, 2020), software development (Carnicer et al., 2019; Spates, 2021) and skills improvement (Osipov et al., 2016; Jinu & Beegum, 2019; Martinez & Toscano, 2021). The methodological design shows a clear empirical orientation (Osipov et al., 2016; Reitz et al., 2016; Jinu & Beegum, 2019; Carnicer et al., 2019; Hsiu & Hsi-Hsun, 2020; Bicen & Kocakoyun, 2020; Cavalcanti et al., 2021; Bilro et al., 2021; Spates, 2021) as opposed to theoretical approaches (Goodman et al., 2015; Veltsos, 2017; Martinez & Toscano, 2021). Quantitative approaches whose sample sizes are disparate and irregular, as are the variables analysed, issues that make it difficult to extract verified and replicable scientific models. Similarly, the instruments used have ad-hoc origins (Reitz et al., 2016; Jinu & Beegum, 2019, Hsiu & His-Hsun, 2020; Cavalcanti et al., 2021; Bilro et al., 2021) or are too generic (Osipov et al., 2016, Carnicer et al., 2019), while in qualitative cases the strategies are based on open techniques such as interviews (Bicen & Kocaoyun, 2020) or discussion groups (Spates, 2021).

The results obtained from the articles analysed can be grouped into four blocks: gamification as a strategy to favour involvement (Reitz et al., 2016; Veltsos, 2017; Bicen & Kocaoyun, 2020; Bilro et al., 2021) gamification as a resource that accentuates satisfaction during learning (Reitz et al., 2016; Jinu & Beegum, 2019; Bicen & Kocakoyun, 2020; Hsiu & Hsi- Hsun, 2020; Martinez & Toscano, 2021; Spates, 2021), the importance of communicative processes in gamified contexts (Osipov et al., 2016; Reitz et al., 2016; Bicen & Kocakoyun, 2020; Hsiu & Hsi-Hsun, 2020) and gamification as a technique for the specific improvement of skills (Jinu & Beegum, 2019). The incorporation of gamification shows positive effects in areas such as motivation and user experience, both of which are also considered in non- educational contexts. These attitudes are increased across the board, which reflects their potential in specific teaching-learning contexts. The communicative processes are also altered or modified by the incorporation of these educational techniques, with differences between incorporation and use. Likewise, new problems associated with this type of techniques are defined, such as their influence on everyday habits such as social networks and marketing (Goodman et al., 2015).

CONCLUSION

The interrelationship between humans and ICTs has been increasing over the years (Demidov et al., 2020). All indications reflect that the establishment of these new media and formats, as is the case with smartphones (Capasso and Mark, 2021), is an already internalized trend. This new scenario represents a significant change compared to previous times, in which daily tasks did not have to be carried out digitally (Vaterlaus et al., 2021;). This is happening at the beginning of the 21st century. Currently, the impact of ICTs entails new ways of accessing, creating, and consuming information; to interact with family and friends, work, and enjoy moments of leisure. A change that also causes problems, such as access gaps due to economic reasons or lack of training (Shapalova, 2020; Paglinawan, 2020; González et al., 2020; Tam et al., 2021).

In Spain, a clear commitment is being made to the integration of ICTs in the educational field. Since 2006 there has been a strategy to incorporate new media, such as tablets or computers in the classroom. A provision of material that has not normally been accompanied by appropriate methodological adaptations (Liu et al., 2020; Pascagaza and Estrada, 2020; Kerzic et al., 2021). This discrepancy is observed given the rise of studies and lines of research in areas such as CD and DBT (de Arruda and Nascimiento, 2021). There is also an emerging interest in gamified processes supported by ICT tools (Jinu & Beegum, 2019), especially due to their direct connection with playful and competitive social habits (Durao et al., 2020). An interest closely associated with the need to review and analyze the new guidelines and norms linked to the didactic message (Soler et al., 2021).

Considering the results found in this work, it is consistent to conclude that research that

associates gamification and the communicative process in the educational field is in its initial phase. There is limited production in this line of research and it is worth noting that the first article on this topic is from 2015. It is complex to consider that there is a real interest in researching this area, which does not last a decade. Although this is a problem that is constantly

changing due to ICTs, it is necessary to delve into it if we intend to improve teaching processes. A need that in the Spanish context should be framed in legislative values such as the DC.

The analysis of the articles collected through Web of Science (WoS) and SCOPUS leads to the following inferences. As previously indicated, the status of the search remains exploratory. The age of this line of research is 2015 (Goodman et al., 2015), a date that reinforces its relatively recent appearance and is complemented by the number of articles that exceeded the inclusion criteria according to the PRISMA methodology, finally being 12. total. Almost all of the works are developed in English, with Europe (n=6) and North America (n=5) being the continents with the greatest production on the subject. There is a disparity between theoretical and empirical approaches, with the trend being works of this second type (n=9). This shows the lack of a strong theoretical base on the subject, with a tendency towards approaches that are too linked to specific contexts. Likewise, the instruments used are ad-hoc (n=5) or generic (n=2). In qualitative cases, the techniques used are interviews (Bicen and Kocaoyun, 2020) or discussion groups (Spates, 2021). And the sample sizes are disparate and irregular, as are the analysis variables considered. All of this makes the lack of verified and replicable scientific models difficult and prolongs.

Different considerations can be made considering the starting hypotheses. The state of production of this topic, the consideration of communicative processes in gamified educational contexts, is weak. There is no solid theoretical basis and the pace of publications in this area is not significant enough to consider its improvement in the short term. Interest in this topic is increasing in terms of publications, going from one work in 2015 to four in 2020 and 2021. The results expose the alterations that emerge from the use of gamification in the classroom, although they are not delved into (Veltsos, 2017; Bicen and Kocakoyun, 2020; Hsiu & His-Hsun, 2020). The main trend in the studies is the relationships with other areas, such as motivation or involvement. Another notable issue is the need for student training, especially in the context of social networks and Fake News.

In relation to the limitations of the present study, there is a risk of loss of information due to the descriptor selection strategy. Two terms, "gamification" and "communication," along with their plurals, were established as the only search elements due to the nature of the research. Some of the lines of research proposed in this area are the creation of new instruments that make it possible to define training gaps for active teachers and those in training.

In conclusion, this study presents a series of theoretical and practical implications. The implications in the educational field, after the analysis, imply the need to review the importance of communicative processes in the practice of gamification tools in the classroom. It is also important to promote the training of all the agents involved, especially in a time of change and constant integration of ICTs in educational practice. The importance of this article not only lies in offering new avenues of research to researchers or experts in the scientific community, but it can also be a link that makes visible new problems that have barely been analyzed, such as the relationship between educational gamification and the communicative processes involved.

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