

Research Article

The Use of Gamification in Language Teaching and Education: A Content Analysis Study

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Article Info	Abstract
Article History	In recent times, technological innovations have revolutionized the educational process. New teaching methods have emerged, and educators are encountering a shift in teaching approaches. The present study is a detailed examination of the incorporation of gamification in education, a rapidly changing domain driven by technological progress. Employing a content analysis approach, the study aims to scrutinize 59 articles from 2018 to 2023, gathered from Google Scholar. The temporal analysis discloses a steady rise in research output, reaching its peak in 2022, underscoring the increasing importance of gamification in education. Authorship patterns explain distinctions between individual and collaborative researchers, emphasizing the significance of individual contributions in the field of language learning. Methodological exploration underscores a varied array of research approaches, with a noteworthy high rate utilizing quantitative methods, contributing to a robust comprehension of how gamification is applied in learning settings. The thematic analysis highlights language learning as a predominant focus, particularly within English language education, displaying the adaptability of gamification across diverse educational spheres. This comprehensive incorporation of findings serves as a valuable reference for academics, educators, and policymakers navigating the dynamic landscape of gamification in education.
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1. Introduction

With the advent of technology, teaching methodologies have taken a significant leap forward. There are new opportunities for educators to incorporate innovative techniques into teaching, particularly language teaching. However, it is important to acknowledge that these advancements come with challenges in implementing technological tools and programs in practical teaching scenarios (Gokhale, 1995). It is indisputable that modern societies demand new trends in education, considering that current students are digital natives. Chen et al. (2015) state that this condition is evident in the way internet-based strategies play a crucial role in shaping educational policies and programs. The impact of these innovative approaches is

substantial, leaving a lasting influence on educational philosophy. Consequently, educators must acquaint themselves with these advancements to adapt to the changing landscape (Dingli & Seychell, 2015).

In recent times, technological innovations have revolutionized the educational process. New teaching methods have emerged, and educators are encountering a shift in teaching approaches. Students' interactions are evolving into a new style, prompting developed countries to work diligently towards reforming the education process to align with the needs of the modern world (Collins & Halverson, 2018).

The purpose of the present article is to explore and assess the utilization of gamification within the realm of language instruction and educational settings. Based on the content analysis study, it appears that the article aims to investigate the distribution of the research articles were conducted according to the years of publication, the number of researchers, the methodologies of the studies, and the disciplines of the studies. Furthermore, it focuses on the implementation of gamification in language education, investigating the substance, patterns, and trends related to the incorporation of gamified elements in language teaching. The objective might encompass comprehending the efficacy, obstacles, and possible advantages of employing gamification as a pedagogical tool in language education.

The research aims to answer the following research questions:

1. How are the articles disseminated over the years of the publication on gamification and education?
2. How are the studies disseminated using gamification and education according to the number of authors?
3. How is the dissemination of research methodologies used in the articles consisting of gamification and education?
4. What are the dissemination of disciplines used in the articles including gamification and education?

2. Literature Review

There is a growing body of research on the use gamification in the area of language teaching and education. In this literature review, the multifaceted landscape of gamification in language teaching and education is investigated, focusing on insights gathered from a comprehensive content analysis study.

2.1 Digital World and Education

In this section, the connection between education and the digital technology is addressed, scrutinizing the ever-changing terrain where digital advances and technology breakthroughs profoundly impact peda-

gical approaches (Shah, 2014). In the contemporary era, engaging students through conventional approaches has become challenging. Modern technological advancements, according to (Phillips, 2005), are compelling both teachers and students to explore novel teaching methodologies. Grant and Basye (2014) note that teachers in learning centers are currently grappling with the challenges of managing a large number of students with varying levels of self-efficacy.

As a result, there is a growing recognition that traditional teaching methods may not effectively address the diverse needs of students in the current educational landscape. The complexities associated with managing students with varying levels of self-efficacy necessitate a reevaluation of teaching strategies. In response to these challenges, the integration of innovative teaching technologies in the classroom is considered a valuable resource for enhancing the learning experience (Bailey & Smith, 2013).

Integrating technological innovations into classrooms can serve as a valuable resource to address current educational challenges. Naturally, providing convenient access to technology in classroom materials and subjects enables learners to foster creativity in constructing knowledge (Hew & Brush, 2007). Technology plays a pivotal role in enhancing language teaching methodologies, particularly for introducing new topics that require innovative trends in educational implementation. Many subjects necessitate advanced tools to facilitate productive teaching outcomes, rendering some materials impractical to be taught solely through traditional approaches (Howell et al., 2004).

In the present time, a noticeable turning point in educational processes is evident. Technology implementation has replaced old-fashioned teaching methodologies, marking a departure from traditional approaches. Addressing the needs of the digital generation requires adapting to new technological trends, as engaging students accustomed to technological advancements proves challenging through traditional teaching methods and materials (Urban, 2015).

2.2 Gamification and its impact on learning processes

Gamification is a novel term that is used in the field of education. The concept of gamification varies from one discipline to another, for example in education, its aim is not purely to gamify the process as much as to enhance learners' motivation or engage them on their tasks (Martí-Parreño et al., 2016). Generally speaking, gamification is the layout of gaming components in a non-game context. It is used in a variety of

ranges particularly in education. Researchers also explore the relationship between gamification and entertainment to educational purposes and increase motivation within a certain topic for a long period (Borges et al., 2014). From this perspective, Adams and Du Preez (2022) claim that gamification is considered as a vigorous methodology that has been added to learning processes with the use of design, structure and elements of games and establishes an environment in the setting of education. Studies show that numerous teachers are familiar with the philosophy of gamification and implement in their classes, on the other side it is not clear whether teachers are not accustomed to gamification theory or not even know how to apply it in classes. What is clear, however, is that educators employ game mechanics to the non-game conditions in which it influences the behavior of the learners and improves their capacities. Kapp (2012) states that the concept of gamification was, in the first place, progressed for the use of various other things such as training, marketing and then teaching. Several researchers have adopted gamification strategies to design activities in the educational context (Hung, 2018). It would seem reasonable, then, that in order to find out how to engage the learners' attention, researchers have conducted studies on the impact of gamification on learning processes. In their study, Ortiz-Rojas et al. (2019), demonstrate that gamification is considered one of the most prominent technological advances. It captures students' attention, providing engaging entertainment and incorporating 'virtual environments' through various methods to keep learners actively involved.

3. Material and Methods

The methodology section introduces the content analysis approach, outlining the methods employed, sample selection, data analysis procedures, and scanning criteria. This comprehensive overview offers insight into the systematic examination of textual or visual content within the study.

3.1. Method

The current research explores an analysis of articles pertaining to gamification and education, adopting a content analysis methodology. The systematic data collection process within this framework is designed to be easily comprehensible for readers. According to (Hsieh & Shannon, 2005), content analysis provides a scientific perspective, enabling an organized examination of various sources, including oral and written content. This study contributes to the understanding of how gamification intersects with education through a careful examination of the available literature. By employing a content analysis approach, the

research seeks to unravel insights that shed light on the intricate relationship between gamification and educational practices.

3.2. Sample

The study materials for this project include of gamification and education-related study resources. The articles were 59 articles which span the years 2018–2023, were gathered from publications that were available on Google Scholar. This temporal scope guarantees an up-to-date and comprehensive analysis of the connection between gamification and education, taking into account new developments and viewpoints found in academic literature.

The selection of the keywords using Boolean procedure, such as "Gamification," "Gamification and Education," and "Gamification and Language Teaching" is driven by the intention to comprehensively explore the evolving landscape of gamification within scholarly literature. These keywords are assumed to be representative of the content due to their hierarchical structure, moving from the broad concept of gamification to its application in education and language teaching, allowing for a nuanced analysis. However, it is acknowledged that relying solely on these keywords may inadvertently exclude relevant articles that do not explicitly use this terminology. The decision to focus on the years 2018-2023 is strategic, aiming to capture the most recent developments and trends in the field. Nevertheless, this temporal constraint may also limit the inclusion of valuable earlier contributions. To address these potential limitations, complementary search strategies and alternative terms will be considered to ensure a more comprehensive and nuanced exploration of the subject matter.

The choice to collect data from the Google Scholar database was primarily influenced by its accessibility and the availability of a diverse range of research articles. Google Scholar serves as a user-friendly and widely accessible platform, making it convenient for researchers to conduct comprehensive literature reviews. Its extensive coverage includes academic papers, theses, conference proceedings, and scholarly articles from various disciplines.

3.3. Data analysis

The research employs the descriptive statistical method, utilizing frequencies and percentages to analyze the gathered data. The data percentages are derived from the measured frequencies, serving as a

foundational component in addressing the research questions. These percentages are thoughtfully illustrated in the tables below, providing a visual representation of the distribution and trends within the dataset. This method allows for a comprehensive examination of the key variables under investigation, facilitating a clearer understanding of the patterns and dynamics inherent in the collected information.

3.4. Scanning criteria

The data in this study is found and assembled according to screening and selection criteria. The documents are searched and brought together on the grounds of the keywords using Boolean procedure. According to these selection criteria, articles that are not related to the educational disciplines are excluded from the area of the study. Only 59 articles that are associated with gamification and education assessed adequately and included in this study. The research articles were investigated regarding the years of publication, the number of researchers, the methodology of the studies, and the research topics.

4. Results and Discussions

This section presents the results of the content analysis inquiry into the application of gamification in language learning and education. The findings focus on the distribution of research articles in terms of publication years, the number of authors participating in the studies, the research methodologies employed, and the academic disciplines represented in the studies.

4.1 The dissemination of the articles over the years of publication

In section 4.1, the temporal distribution of articles will be examined, investigating how the articles are spread across the years of publication. This analysis offers insights into the changing landscape of literature on the subject, presenting a chronological view of the dissemination and expansion of pertinent research throughout time.

Table 1. Temporal Trends in Gamification Research within Educational Contexts

Years of Publication	Number of Articles	Percentage
2018	8	10%
2019	11	19%
2020	10	17%
2021	10	17%
2022	12	20%
2023	8	8%
Total	59	100%

Table 1 provides a precise overview of how academic papers discussing gamification in education are distributed throughout various publication years. The data, which was obtained through a detailed content analysis study, illustrates how the state of research in this ever-evolving sector is changing. The table presents the number of articles and their associated percentages for every year, offering significant insights into the themes and patterns in the literature on gamification in education across time.

The data that has been provided shows that the quantity of research has consistently increased over the given time frame. Eight research, or 10% of the total body of work, were published in 2018. The following years experienced significant growth: 2019 accounted for 19%, 2020 and 2021 for 17%, while 2022 marked a peak of 20%. Even if 2023 makes up a lesser portion of the total, eight pieces make up 8% of the total and add to the continuing scholar publications.

The overall information indicates how important and popular gamification is becoming in educational settings, indicating that scholars are continuing to focus on this topic. The total number of articles, 59, shows the scope of the field's research, while the percentages provide a detailed picture of the relative importance of each publishing year over the period under study. This chart is a useful resource for academics and teachers who want to keep an eye on the direction of gamification research in education and understand the time dynamics influencing this developing area.

The years with the greatest number of publications—2019 and 2022—are particularly significant. The increased focus in 2019 can be ascribed to a number of things, such as the growing recognition of gamification's value in language learning, technological developments that offer new resources for gamified learning, and a general trend in education toward more interactive teaching techniques. Similar to this, in 2022, the body of work that has been done on gamification research may have an impact on the continued interest in the field due to the momentum that these studies have created. The continued interest in learning about the function of gamification in language instruction may be attributed to the incorporation of technological innovations into educational settings as well as the continuous need for creative teaching strategies. These were perhaps the key years when academics and educators realized how beneficial gamification might be, which sparked a wave of articles that improved our knowledge on how to use it in language learning.

4.2. The dissemination of research articles based on the number of authors.

In exploring the intersection of gamification and education, this section explores the distribution of studies, specifically examining how varying numbers of authors contribute to the understanding of this dynamic relationship.

Table 2. Authorship Patterns in Gamification Research within Educational Contexts

Number of Authors	Number of articles	Percentage
1	22	37%
2	17	29%
3	13	22%
4+	7	12%
Total	59	100%

Table 2 sheds light on the patterns of authorship distribution in gamification research in the field of education, offering important insights into trends in scholarly collaboration. The information, which was taken from content analysis research, shows the quantity of articles written by different group sizes as well as the percentages of those pieces. This advances our comprehensive knowledge of collaborative dynamics in the ever-evolving field of gamification research.

A significant amount of research is carried out by individual authors; 22 articles (or 37%) were written by only one person researchers. Collaboration is highly valued, as evidenced by the 17 publications (29%) with two authors, which points to a growing trend of collaborative investigation of gamification in educational settings. A closer look indicates that there is a moderate amount of triadic collaboration, with teams of three authors producing 13 papers (22%) of the total. Furthermore, seven papers (12%) in the table had contributions from four or more authors, highlighting the value of bigger collaborative efforts.

With a blend of individual and team-based research endeavors, the data highlights the various collaboration patterns in gamification research across the education literature. The percentages provide a detailed view of the predominance of various authorship structures and shed important light on the dynamics of collaboration that influence scholarly production in this discipline. For scholars, instructors, and other interested parties who want to understand cooperation trends in gamification studies, this data is crucial since it allows for a more complex analysis of the group work that goes into expanding our understanding of this developing field.

There are a number of reasons for the predominance of individual authors in influencing the research output. These writers usually have unique knowledge of the field of gamification in language instruction, which allows them to conduct in-depth and targeted research. Allowing authors to freely choose their own study topics and methodology is essential since it gives them the freedom to independently investigate various aspects of gamified language instruction. Some writers may have developed a consistent body of work throughout time as a result of their extended immersion in the field. Furthermore, the interdisciplinary character of gamification research can draw people from a variety of backgrounds, encouraging a broad spectrum of viewpoints in this field. Academic collaboration is essential, but organizing and coordinating group efforts can be difficult, which could explain why there are more research papers written by individual authors. All things considered, the overwhelming presence of individual authors is indicative of a blend of experience, independence, and a sustained interest in researching gamification in language instruction.

4.3. The dissemination of research methodologies over the articles

In the context of gamification and education, this section examines the distribution of research methodologies, elucidating the utilization of these methods in articles to enhance comprehension of this pioneering intersection.

Table 3. The Distribution of the Research Methodologies Used in Articles.

Types of Research Methodology	Number of Articles	Percentage
Mixed	20	34%
Qualitative	14	24%
Quantitative	25	42%
Total	59	100%

Table 3 provides a comprehensive overview of the research methodologies applied in examining gamification in educational environments. The data, which comes from an in-depth content analysis study, illuminates the distribution of papers across different research approaches and offers important insights into the methodological environment of the subject.

A wide variety of research approaches are shown in the table, with a majority of quantitative methodologies. A noteworthy of 25 studies (42%) use quantitative techniques to investigate various aspects of

gamification in the classroom. This focus on statistics demonstrates a commitment to empirical and statistical analysis and provides a quantitative framework for investigating the application of gamification principles in learning environments.

The total data shows a well-rounded and diverse approach to gamification research, including both qualitative and quantitative approaches—often combining the two for a more thorough examination. Offering a comprehensive view on the methodological diversity that defines the scientific quest of understanding and promoting gamification in educational contexts, this material is important for both researchers and practitioners.

The overwhelming majority of articles (42%) use quantitative research approaches, demonstrating their dominance in the field. The particular nature of the research questions posed in the study may be connected to this preference for quantitative methodologies. When attempting to assess and quantify the impact of gamification in language instruction, quantitative research works especially well because it collects numerical data that can be statistically analyzed. Using quantitative methods is frequently linked to the pursuit of empirical evidence, intervention efficacy measurement, and pattern or connection identification within large datasets. Moreover, the quantitative methodology is in perfect harmony with the goal of offering concrete and measurable understandings of the relationship between gamification techniques and language learning results. This study places a major emphasis on quantitative approaches, demonstrating a dedication to properly assessing the quantifiable effects of gamification on language instruction and learning. As a result, it adds significant empirical data to the academic discourse surrounding the topic.

4.4. The Dissemination of Disciplines Used in the Articles Including Gamification and Education

This section explores the complex network of interdisciplinary viewpoints captured in the studies, illuminating the several domains that come together to influence our comprehension of the connection between gamification and educational practices.

Table 4. A Topic-based Distribution of Disciplines

Research Topic	Number of Articles	Percentage
Business management	13	22%
Language learning	29	49%
Psychology	17	29%
Total	59	100%

A comprehensive analysis of scholarly articles exploring the relationship between gamification and education is demonstrated in Table 4. This analysis provides insightful information on the issues investigated in this field of study. The information, acquired by content analysis, reveals the distribution and frequency of research subjects in the larger field of gamification in educational settings.

Language learning is a major area of interest in this research, garnering interest from 29 publications (or 49% of all the articles). This emphasis highlights the potential of gamification to improve language learning outcomes and experiences, underscoring its significance in language teaching. Psychology, with 17 articles (29%), is in the second place of the publications. Furthermore, within the subset of business management, 13 articles (22%) specifically explore the application of gamification techniques. This focused category indicates a strong interest in using gamification strategies to boost language proficiency within the context of ESL instruction.

The data obtained from this table highlights the wide range of topics covered by gamification research in education, including psychology, business management, and language learning. This material is an invaluable tool for academics, educators, and policymakers to gain a deeper understanding of the domains in which gamification has been studied and its possible effects on different facets of the learning process.

There is a notable emphasis on language learning in nearly half of the articles (49% of the total), and there are a number of reasons for this popularity. First of all, language learning is a dynamic discipline that welcomes research inquiries since it necessitates creative and efficient teaching approaches. The increased interest in incorporating gamification into language instruction is probably powered by the focus placed on language learning globally, both as an academic field and as a necessary communication ability. Second, gamification's engaging and interactive qualities fit in perfectly with language learning's pedagogical goals, which are to improve instruction by making it more effective and pleasurable. Language learning has become more prominent in study because to the practical benefits of gamifying language instruction, which are expected to attract educators and researchers working in this field. The prominence of language learning as a research topic emphasizes its central importance and illustrates the potentially revolutionary impact of gamification on language instruction, even though psychology and business management are equally important fields.

5. Conclusion

The area of gamification in education has become increasingly dynamic and ever-evolving due to technical improvements and the growing recognition of its potential to enhance teaching methodologies. This study's content analysis provides a thorough review of important trends and patterns in the relationship of gamification and education, as well as insightful information about the methodological, thematic, temporal, and collaborative aspects of this field of study. The temporal analysis reveals a steady increase in the number of research publications over time, peaking in 2022. This pattern demonstrates the growing significance and acceptance of gamification in learning environments. In order to give educators, researchers, and policymakers a dynamic perspective on the latest discoveries in this dynamic subject, the percentages associated with each year offer a nuanced knowledge of the varied emphasis on gamification research in different times. The differences between solitary and group efforts are highlighted by the collaborative dynamics of gamification research. Given the special characteristics of conducting studies that rely on individual variations among researchers and fields, the preponderance of single-author publications (37%) highlights the importance of individual contributions. The methodological investigation highlights the variety of research strategies used to examine gamification in learning environments. Contributing to the development of a strong framework for comprehending the implementation of gamification principles in learning contexts, academics show a dedication to empirical study, with a noteworthy emphasis on quantitative approaches (42%). Incorporating qualitative and mixed-methods techniques enhances the methodological framework and promotes a comprehensive comprehension of the effects of gamification on education. Based on a thematic analysis of 49% of the articles, language learning is shown to be the main area of interest for gamification research. This emphasis highlights how gamification can improve language learning experiences and outcomes. The particular focus on English language education (22%) highlights a particular interest in applying gamification techniques to enhance language competency, particularly in the context of ESL training. Furthermore, the investigation of higher education, psychology, and corporate management shows how adaptable gamification applications may be in a variety of educational contexts.

The compilation of data from these tables shows how diverse the field of gamification research in education is. A dynamic and changing landscape is a result of the growing number of publications, various collaboration patterns, methodological diversity, and variety of topic focuses. This thorough research is an

invaluable tool for academics, educators, and policymakers attempting to navigate and comprehend the changing dynamics of gamification in the field of education as it continues to transform the educational experience.

Declaration of Competing Interest The author declare that he has no known competing of interests.

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