



Examining Story Production Improving Creative Thinking in the Alpha Generation: A Systematic Review

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ABSTRACT

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Keywords

Story Production, Story Writing, Storytelling, Creativity, Creative Thinking.

Purpose: The present systematic review study had the general objective of analyzing and synthesizing the existing scientific evidence on the effectiveness of the production of stories to improve creativity in the alpha generation. **Methodology:** The PRISMA 2020 method was used to develop a systematic review where the databases used were Scopus, ScienceDirect, Web of Science and university repositories, with the search strategy ("production of stories") AND ("creativity" OR "creative thinking") AND ("primary education") in Spanish and English. After applying the inclusion and exclusion criteria, 10 articles containing a total of 1088 sample elements were obtained.

Findings: The works were mainly of a quasi-experimental design, using story production programs as an independent variable, and in the last two years adding digital and audiovisual resources. No standardized instrument was found for the evaluation of creativity. **Implications to Research and Practice:** In the experimental design studies, the positive influence of the production of stories on creativity in primary school students of the alpha generation was demonstrated, in the correlational studies a moderate and significant relationship was evidenced. It is striking that, contrary to what is suggested by specialists, the number of sessions reported is less than those recommended without losing effectiveness.

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1. Introduction

The alpha generation, made up of children born in the digital and technological age, faces a constantly changing world and unprecedented creative challenges. In this context, the production of stories has emerged as an educational practice that seeks to promote creativity in children of the alpha generation. (Tavares, Azevedo, & Marques, 2022). The production of stories is a pedagogical activity in which students are guided to create their own original stories, actively participating in the entire creation process. This involves selecting the theme, developing characters, designing the plot, establishing the atmosphere and build a central message, having the freedom to use your personal style to tell the story (Celis, Rivas, & Camacho, 2013; Vallejo, 2012).

Various studies indicate that the production of stories allows children to promote divergent thinking by involving the generation of multiple ideas and solutions (Saavedra Odar, 2019); to cultivate personal expression by being stories a means to express emotions, thoughts, desires and express own voice (Bruder, 2020; Lupaca Canchaco & Perez Alarcon, 2022); and to connect culture and society through stories. Children can understand their cultural environment and the environment that surrounds them by reflecting aspects of their daily life (Bruder, 2020; Vallejo, 2012), It stimulates their imagination by giving them the opportunity to create unusual characters and situations.

Creativity promotes adaptability, problem-solving, critical thinking, innovation, personal expression, and collaboration, which are fundamental skills for the children of the Alpha generation to become flexible, resourceful, innovative individuals capable of facing challenges and seeking new and better opportunities (Perilla Granados, 2018). Evaluating the impact of story production on the creativity of the Alpha generation is essential due to their growth in a highly technology-mediated environment and the storytelling through various media. Creativity is a crucial skill in today's society, and understanding how story production and consumption influences its fundamental development. This entails an analysis of how media can influence their values and perceptions, as well as their ability to communicate and express themselves personally through storytelling. Assessing the educational potential of stories and their impact on the imagination of this generation is important, as is identifying potential risks, such as exposure to inappropriate content or technological dependency.

A current challenge and trend in education that makes the study of the impact of story production on the creativity of the Alpha generation particularly relevant is the increasing digitization and online learning. The COVID-19 pandemic accelerated the adoption of online education, which has heightened children's exposure to digital content and storytelling through electronic media. This digital environment poses challenges in terms of the quality and management of the content to which children are exposed, as well as the amount of time they spend online. Online learning may require a higher level of autonomy and creativity from students, making the assessment of the influence of stories on their creativity even more pertinent to ensure the development of strong creative skills in a constantly evolving digital environment. Understanding how stories impact the creativity of the Alpha generation in this context is essential for effectively adapting teaching methods and online content management.

The present study is justified in the sense that there are no similar reviews on this topic. Likewise, it identified emerging patterns and trends, and possible gaps in existing knowledge. A critical view of the effectiveness of story production in improving creativity in the alpha

generation was provided, and relevant conclusions were drawn for educators, parents and professionals interested in promoting creativity in this generation. In this study, a comprehensive systematic review was carried out based on the methodological guidelines PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) (Page et al., 2021) to examine and synthesize the available scientific literature on story production and its impact on improving creativity in the alpha generation. The main objective was to analyze previous studies in this field and provide an overview of the existing evidence.

The present systematic review study sought to answer key questions: What are the effects of story production on improving creativity in the alpha generation? What variables have been evaluated in previous studies? What are the implementation contexts and reported results? The analysis of existing literature helped identify patterns, knowledge gaps and areas of future research. The results of this study would have significant implications for educators, researchers, and professionals interested in promoting creativity through the production of stories. Furthermore, it is expected that this systematic review will serve as a basis for the development of effective and evidence-based educational programs that can enhance creativity in the alpha generation and prepare them to face upcoming challenges in innovative ways.

2. Material and Methods

- *Research Design*

PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) standards were used where the articles with the greatest quality evidence provide an answer to the research questions, searched and selected (Page et al., 2021). The study's intervention variable was the application of a program or strategy based on the production of stories without taking into account the number of sessions. As the outcome variable, the creativity variable was considered as creative thinking, measured with an instrument with evidence of validity and reliability. The statistical values of the test were considered as results. ANOVA with their respective significances.

- *Parameters for Inclusion and Exclusion*

The study was guided by a few inclusion and exclusion criteria. The inclusion criteria were many such as that studies had to have a quantitative focus and be of either experimental or non-experimental design. The population under consideration should consist of children aged 6 to 15 years, encompassing both males and females. In addition, the title should clearly indicate that it is a systematic review; the justification of the review must describe according to the context of what is already known about the topic; the article should pose the research question in relation to the participants, intervention, results and design of study; it should specify the inclusion and exclusion criteria; mention the databases used; explicitly present the search strategy; describe the study selection process; the data extraction methods; list the elements PEAKS for which data were sought; describe the risk of bias assessment method; present the number of studies screened and assessed for eligibility using a flowchart PRISMA; present in a table the characteristics of the studies included in the review; present the risk of bias assessment table; summarize the main findings including the strength of the evidence; discuss the limitations of the studies and the review; and provide a general interpretation of the findings and future implications.

On the other hand, the exclusion criteria required to exclude the meta-analysis. Other exclusion items were publication of the protocol, summary measures, synthesis of statistical results, additional analyzes of the studies for meta-analysis and results of individual studies. These criteria were chosen because they enables the identification of studies that could provide results on the effectiveness of storytelling production in enhancing creativity in Alpha generation children.

- *Systematization of Search and Data Collection*

Keywords and Boolean operators were used as a search strategy, which was applied to the titles and abstracts, in Spanish and English and published in the last 7 years. Additionally, the search was carried out in the gray literature using the strategy ("producción de cuentos") AND ("creatividad" OR "pensamiento creativo") in theses published in the repositories of various universities indexed in Google Scholar, from May 20 to 22, 2023. Databases related to psychology and education were used, such as Scopus (<https://www.scopus.com>), ScienceDirect (<https://www.sciencedirect.com/>), Web Of Science (<https://www.webofscience.com/wos/woscc/basic-search>), The search was carried out from May 15 to May 22, 2023. These databases provided quality research and yielded positive results with the terms used in the search strategy. Other databases were eliminated for not providing positive data.

The data retrieved with such a search strategy was managed in the Zotero reference manager, from where duplicate articles were eliminated. Articles were then selected by title and abstract. Those that did not have the complete article were eliminated. The articles with full access had their methodological and statistical quality evaluated to be considered within the review. This process is presented in Figure 1.

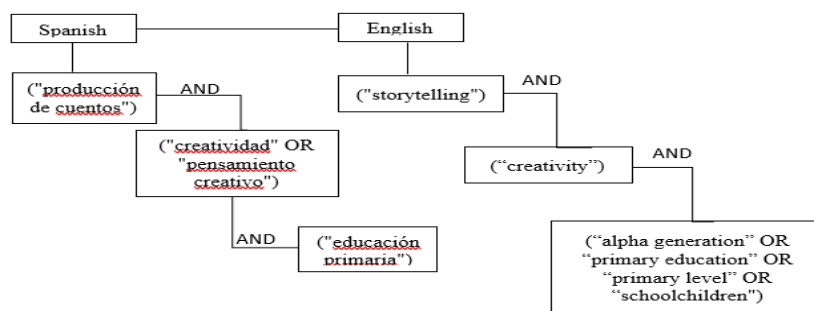


Figure 1: Combination of Boolean Terms and Keywords Used in Searching for Information.

- *Data Extraction and Synthesis of Findings*

Information was extracted from the selected articles in an Excel data sheet prepared for the study where the following data were recorded: study data that included author, year and country. Population to include elementary school students or alpha generation. Intervention included production of stories as sessions, workshop or educational program regardless of the number of sessions. Result was measured as the influence on creativity in primary school students, as significant or non-significant improvement, reported through the F or T tests with respective significance.

- *Risk of Bias Assessment*

The bias risk assessment allows for the evaluation of the methodological quality of the studies included in the review. Following the guidelines outlined in the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) checklist, this assessment involved a thorough analysis of critical aspects such as study design, population selection, variable definitions, data collection, and statistical analysis.

3. Results

The search process identified 605 documents, 102 articles and 533 reports, which were processed with the Zotero reference manager, with which duplicate documents were eliminated. Next, 30 documents, 10 articles and 20 studies were preselected by title and abstract, for extraction and complete review of the inclusion and exclusion criteria, where it was only possible to recover 6 articles and 13 studies. After the complete review, 3 articles and 6 studies were eliminated. Finally, 10 complete documents that met the inclusion and exclusion criteria, with quality evidence and that answer the research question were selected for inclusion in this review, as can be seen in Figure 2. The data extracted from the articles selected for this review were analyzed according to the objectives of the present review. Next, the first section presents the results related to the methodological aspects of the selected studies, and in a second section the aspects that allow evaluating the effectiveness of the production of stories on creativity in primary school children.

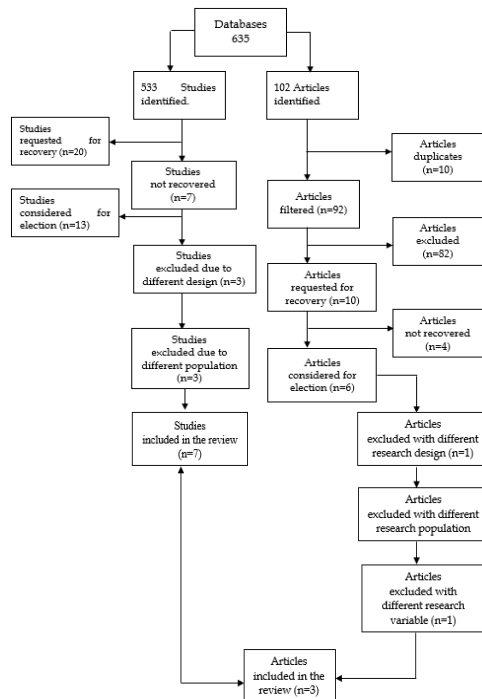


Figure 2: Flowchart of the Process for Selecting Articles Included in The Review.

- *Methodological Aspects*

To analyze the trends in the field, the methodological aspects were analyzed. The variables considered were the database where the study was located, the type of research design used, the sample size and the age range of the participants, as well as the teaching area where the study was carried out, as shown. see in table 1.

Table 1

Methodological Aspects of Participating Studies in the Review.

Author and Year	Data Base	Design	Educational Level	Sample Size	Teaching Area
1. Moola (2021)	SCOPUS	Experimental	62	5 a 12	Art
2. Pavlou (2020)	WOS	Quasi-experimental	28	11 a 12	Communication
3. Ruiz-Bañuls et al. (2021)	SCOPUS	Experimental	183	9 a 11	Communication, Math, Natural Sciences and Social Sciences
4. Atencia Tineo (2022)	Repository	Pre experimental	16	10	Communication and Social Sciences
5. Barrantes Castañeda (2019)	Repository	Quasi-experimental	56	8	Communication
6. Chambilla Chambilla (2021)	Repository	Correlational	19	7	No apply
7. Saavedra Odar (2019)	Repository	Quasi-experimental	32	8	Communication
8. Martínez-Calderón, Querales-Torres, and González-Roys (2022)	Repository	Pre experimental	44	6 a 10	Communication
9. Ramos Arévalo (2022)	Repository	Correlational	66	6 a 7	Communication
10. Borislavovna Borislova (2017)	Repository	Quasi-experimental	582	6 a 12	Communication

Note. Data extracted from the selected articles.

In relation to the distribution according to the databases and data sources used in the search, of the 10 selected articles, 70% (n = 7) corresponded to theses published in university repositories, the 20% (n = 2) were from Scopus and 10% (n = 1) from Web of Science. These results indicate that this field presents greater development in universities and whose results are not transferred to scientific journals, remaining only as gray literature. This would demonstrate the need to publish works of this type in indexed journals.

Regarding the type of research design, they were classified as experimental, quasi-experimental, pre-experimental and correlational. The experimental design is characterized by intentionally manipulating independent variables in a controlled context to analyze the consequences of the manipulation on the dependent variable, where the experimental and control groups are selected at random (Cooper, 2018). The quasi-experimental design differs from the experimental design because the groups are not selected at random; however, it also seeks to analyze the influence of an intentionally manipulated independent variable on a dependent variable. (Hernández-Sampieri & Mendoza, 2020). of the selected articles the 40% (n=4) presented a quasi-experimental design and only the 20% (n=2) presented an experimental design, the design criteria included both experimental and non-experimental studies which had to meet the other criteria defined following the quality steps for a systematic review study, some works with a non-experimental design could have been excluded. Future reviews could focus on the qualitative production of this field and perform a meta-synthesis that organizes the field more broadly.

Regarding the sample size of the studies, these range between 16 and 582, with an average of 108. It can be seen in these data that in the area a defined number of participants has not been established, most of the studies use convenience sampling without reaching a recommended number for this design (Cooper, 2018). When considering the disciplinary areas to which the studies referred. In communication, the 80% (n=8) of studies, and to a lesser extent in social sciences with the 20% (n = 2) and other areas, while one study did not mention a specific area. There is a marked predominance of the area of communication where these investigations were developed, which would indicate that the production of stories is mainly focused on this area and is not widely spread in other disciplines.

- *Aspects Related to Effectiveness*

To evaluate the effectiveness of story production as a tool to improve creativity in children of the alpha generation, the following variables were taken into account: the form or strategy of story production, the use that was given to it, the number of sessions, the measurement instrument that was used to measure creativity and the results obtained. These variables are presented in Table 2.

A variable to evaluate the effectiveness of story production to improve creativity in children of the alpha generation was to identify the form of story production used in the studies where the following were identified: story production, digital story production, short story, Gamified experience with narrated story and stories with images. Based on what was observed in the analyzed works, the following strategies were identified: 50% (n = 5) of the studies used the production of stories, and to a lesser extent the other strategies. This result is in accordance with the theory and application in the field, since the production of written stories is one of the main objectives in education today, since it allows students to create and understand texts, expounding their thoughts and expressing them in a meaningful way. written form (Muñoz et al., 2008). In the studies, a digitalized form of story production was also observed and even produced through films, making use of the technological resources currently available, new forms of strategies for the production of stories can be glimpsed.

The objective of the production of stories was also considered, although due to the search strategy and the inclusion criteria the improvement of creativity was considered, other additional objectives were also observed in the 20% (n =2) improve learning and 10% (n = 1) emotional health, a situation that coincides with the contributions of other authors who point

out that stories can be a pedagogical tool to enhance learning capacity in various academic areas where reading and comprehension are used (Soto Reatiga, 2017), as well as having a therapeutic use in children's emotions, allowing them to express their deepest and most painful emotions through metaphor, mixing reality with fantasy. (Bruder, 2020; Recéndez, 2015), Future research could raise the possibility of developing a battery of tests that can identify the influence of the production of stories on academic, emotional and creative aspects.

Table 2

Variables Relevant to Effectiveness.

Author and year	Strategy	Aim	Number of stages	Evaluation instrument	Results
1. Moula (2021)	Story-Telling; Story-Making	Improve emotional health and creativity	Not report	Qualitative interview	Through stories, children express their emotions and thoughts, mixing reality with fantasy, allowing them to keep real events secret.
2. Pavlou (2020)	Digital Story Telling (DST)	Improve your communication skills and creativity	5 stages	Ad Hoc Questionnaire	Storytelling substantially increased creativity in children, giving them the opportunity to express their ideas and think "outside the box."
3. Ruiz-Bañuls et al. (2021)	Gamified experience with transmedia narratives	Improve learning of communication, mathematics, natural sciences and social sciences	8 stages	Ad Hoc Questionnaire	The students perceived that they increased their level of creativity when carrying out the narrative activities.
4. Atencia Tineo (2022)	Short Story production	Improve creativity	12 stages	Ad Hoc Questionnaire	The production of stories can significantly improve creativity in 5th grade children. (p<0.05)
5. Barrantes Castañeda (2019)	short story production	Improve creativity	8 stages	Creativity test Guilford	The application of the story production program allows you to develop creativity
6. Chambilla Chambilla (2021)	Short story production	Determine the relationship between the production of stories and creativity	No apply	TEPTE; Creativity Quiz	Text production influences creativity, presents a significant moderate positive relationship (r=0.623, p<0.05)
7. Saavedra Odar (2019)	Short story production	Improve Creativity	5 stages	Ad Hoc Questionnaire	The production of stories improves creative thinking from the model Bono, Treffinger y Herrmann
8. Martínez-Calderón et al. (2022)	Short story	Improve Creativity	Not report	Ad Hoc Questionnaire	The short story program improved the level of creativity in primary school children
9. Ramos Arévalo (2022)	Pictographic stories	Determine the relationship between the production of stories and creativity	No apply	Ad Hoc Questionnaire	There is a significant relationship between the production of stories and creativity in primary school children
10. Borislavovna Borislova (2017)	Stories with songs	Improve Creativity	Not report	Children's creativity test	Creativity improves significantly with stories told with background music.

Note. Data extracted from the selected articles.

Table 3*STROBE Risk of Bias Assessment.*

Author and year	Study design	Setting	Participants	Variables	Measurement	Bias	Study Size	Statistical methods	Main results	Overall
1. Moula (2021)	Low	Low	Low	Low	Unclear	Unclear	Unclear	Unclear	Low	Low
2. Pavlou (2020)	Unclear	Low	Unclear	Low	Low	Unclear	Unclear	Unclear	Low	Unclear
3. Ruiz-Bañuls et al. (2021)	Low	Low	Unclear	Low	Low	Unclear	Unclear	Low	Low	Low
4. Atencia Tineo (2022)	Low	Low	Unclear	Low	Low	Unclear	Unclear	Low	Low	Low
5. Barrantes Castañeda (2019)	Unclear	Low	Low	Low	Low	Unclear	Low	Unclear	Low	Low
6. Chambilla Chambilla (2021)	Low	Low	Unclear	Low	Low	Unclear	Unclear	Low	Low	Unclear
7. Saavedra Odar (2019)	Low	Low	Unclear	Low	Low	Unclear	Unclear	Low	Low	Low
8. Martínez-Calderón et al. (2022)	Unclear	Low	Low	Low	Low	Unclear	Unclear	Unclear	Low	Unclear
9. Ramos Arévalo (2022)	Unclear	Low	Low	Low	Low	Unclear	Low	Low	Low	Low
10. Borislavovna Borislova (2017)	Low	Low	Unclear	Low	Low	Unclear	Low	Unclear	Low	Low

Note. N = 10

Another variable observed was the number of intervention sessions, which ranges between 5 and 12 sessions, with an average of 7.6 sessions, where only 50% reported the number of sessions (Table 2). The remaining 50% did not report nor corresponded due to the type of research design. This is a variable that is not sufficiently clarified in the studies and it is important to clarify it to be able to evaluate effectiveness. However, in studies where the number is reported, 90% (n = 9) reports a lower number than the recommended ones, which vary between 10 and 16 (Celis et al., 2013; Vallejo, 2012) indicative that it is necessary for future research to take into account the recommendations to enhance the results of the studies.

Another relevant aspect to evaluate effectiveness is the creativity evaluation instrument. In it 60% of the studies, ad hoc questionnaires were developed, only in the 30% (n = 3) standardized tests were used (Table 2). These findings coincide with those of other authors, who point out that there is still no single instrument to evaluate creativity, however in the field the tests of creativity stand out Torrance and the battery Guildford (Escobedo, Mendoza, & Cuervo, 2009) a situation that makes it difficult to compare effectiveness between works compared to the strategies used in the production of stories.

Finally, the results obtained by each study were observed, which in their entirety affirm that the production of stories significantly improves creativity in children of the alpha generation. From these results it can be concluded that the production of stories is a useful tool

to improve the level of creativity since all studies have reported that they improved this variable, as seen in Table 2. During the selection process of the articles included in this review, full-text articles were eliminated for the following reasons: design other than experimental or correlational (Cardoza Aponte & Santisteban Fernández, 2018; Panta Vega, 2022; Potters et al., 2023; Villavicencio Sirlopu, 2021); different population (Del Moral Pérez, Bellver Moreno, & Guzmán-Duque, 2019; Gil Fernández, 2021; Villegas Ortiz & Requis); distinct independent variable (Gregoriou, 2019).

The data presented in Table 3, which shows that 70% of the reviewed studies demonstrate a low overall risk of bias, with the remaining 30% indicating an uncertain risk of bias, implies that most of the articles included in the review maintain a strong methodological quality. This uniformity and quality in the evidence provide a solid foundation for the reliability and usefulness of the studies discussed in the review, consequently bolstering the credibility of the findings and conclusions drawn in this analysis.

When analyzing the language of the selected publications, it was observed that they are mainly in Spanish coming from theses and located in university repositories with a 70% (n = 7). This situation shows that there is a need to promote the publication of academic studies in indexed journals as summarized in Figure 3

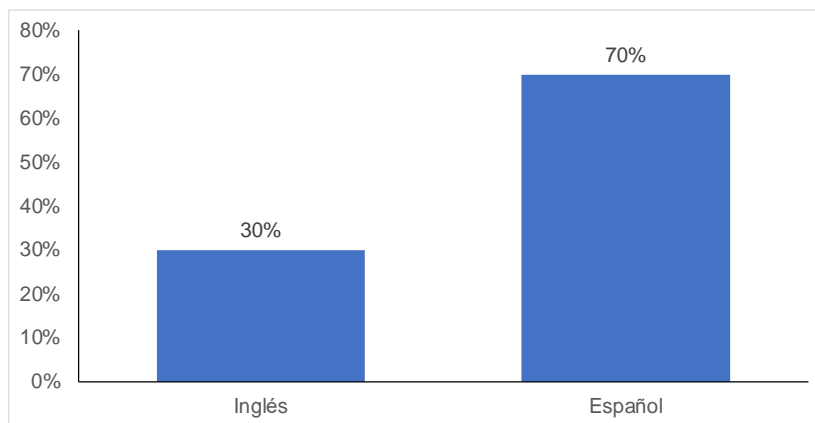


Figure 3: Count of Results Obtained by Language.
Note. Data extracted from the selected articles.

- *Assessment of Study Quality*

To ensure the rigor and reliability of this review, an assessment of the quality of the included studies was conducted. Several approaches were used for this assessment. First, clear inclusion and exclusion criteria were established prior to the study search, allowing for the selection of relevant research concerning the relationship between storytelling and creativity in the alpha generation. These criteria considered study design, focus on alpha generation, and creativity measurement. Furthermore, studies were independently reviewed by two reviewers to minimize bias, and any disagreements in the inclusion or exclusion of studies were resolved through discussion and consensus among the reviewers. The methodology of each included study was evaluated, considering aspects such as research design, sample size, creativity measures employed, and clarity in the presentation

of results. The quality of the study reporting was also assessed, including clarity in the description of methods, data processing quality, and statistical results. The potential for bias, whether selection, measurement, or publication bias, was thoroughly examined. This assessment of the quality of the included studies ensures the robustness of the conclusions and the reliability of the results in this review.

4. Discussion

This work is a contribution to teachers and researchers as it provides an updated and organized perspective of the academic productions in this area, as well as the questions and limitations that have been presented in the studies that have been carried out and that can give rise to a line of work in the future. The main result of the studies reviewed is that story production programs are effective in improving creativity in primary school students of the alpha generation. It is striking that the effectiveness of these programs is maintained despite the fact that the research presents a lower number than those suggested by those who propose models of story production programs such as Celis et al. (2013). Vallejo (2012) who highlight the importance that the minimum number of sessions should be 10 and on average 16, which would allow a deep approach to the production of stories and not a simple superficial approach. It includes, as a fundamental element, that the story workshops schedule their activities individually where each child expresses their ideas at their own pace without being influenced or limited by a partner. It would be advisable to carry out research aimed at defining the necessary characteristics in number of sessions, form of development of activities and other relevant characteristics for the development of story production programs, in order to produce results in a short time and with the least number of resources.

While some instruments to measure creativity have been identified, a consensus on their widespread use across all educational settings is still lacking. The absence of a standardized tool to assess creativity in Generation Alpha children poses significant challenges in current research. This limitation affects the comparability, validity, and reliability of results and may introduce cultural and linguistic biases. To overcome this limitation in future research, it is essential to develop culturally sensitive standardized assessment tools that reflect the expressions of creativity in the digital context in which this generation is growing. Additionally, cross-validation in different populations and settings, the combination of quantitative and qualitative methods, interdisciplinary collaboration, and consideration of the specificities of digital environments in assessing the creativity of Generation Alpha can be employed. In future work, creativity measurement instruments could be developed in accordance with common academic standards for different educational levels, and the evidence of validity and reliability of existing instruments and their applicability to each educational level could be assessed.

Limitations of the reviewed studies include a lack of available literature in indexed journal publication databases regarding the use of storytelling programs to enhance creativity. The majority of the identified studies were located in university repositories and followed a quasi-experimental design, which may impact the robustness of their results. Another limitation is associated with the search strategy, which was conducted without language restrictions, enabling a global perspective on creativity and story production, considering diverse approaches and cultures. This enriches the understanding of the relationship between story production and creativity in Generation Alpha children.

However, it is possible that some studies did not explicitly specify in their title and abstract that they were investigating the independent variables of story production and creativity in Generation Alpha children.

In the context of Generation Alpha, various research directions and areas of study open up to gain a better understanding of the effects of story production on creativity. One fundamental avenue involves investigating the long-term impacts of story production on the development of creative skills as these children grow. Furthermore, a comparison of story production methods can be conducted, evaluating the effectiveness of approaches such as writing, drawing, creating digital content, and storytelling. The influence of online collaboration on the creativity of Generation Alpha is also a key topic to explore, considering their digital nativeness. Moreover, it is essential to analyze whether story production affects different age groups within this generation differently and how cultural diversity can influence the relationship between story production and creativity. The quality of content produced by children and the development of educational tools and resources to stimulate creativity are additional areas deserving attention. These research endeavors will contribute to a deeper and more holistic understanding of how story production can drive the creative development of Generation Alpha.

5. Conclusion

This study represents a valuable contribution for educators and researchers by providing an updated and organized overview of academic research in the field of storytelling programs. It also identifies questions and limitations that can lead to future research directions. The results emphasize the effectiveness of these programs in enhancing creativity in primary school students from Generation Alpha, despite the fact that the reviewed studies included a lower number of sessions than recommended by other experts in the field. Future research is needed to define the necessary characteristics of these programs, including the number of sessions and the design of activities, with the aim of optimizing results in terms of time and resources.

Furthermore, the lack of consensus in selecting creativity assessment tools for Generation Alpha children is a notable challenge in current research. To address this limitation, it is suggested that culturally sensitive standardized assessment tools be developed to reflect creativity expression in the digital context in which these children are growing up. Additionally, cross-validation in different populations and contexts, the combination of quantitative and qualitative approaches, interdisciplinary collaboration, and consideration of the specifics of digital environments in assessing Generation Alpha's creativity are advocated. These measures can pave the way for future work that establishes common academic standards for creativity measurement tools and assesses the validity and reliability of existing instruments at various educational levels. In summary, this study provides a solid foundation for advancing research in this crucial area for the education of Generation Alpha.

6. Statement of Contributions

The authors declare that they have contributed in the following roles: G.J.V.C. contributed with the management of the investigative process, information search, data management, research development, review of the articles and writing of the article and

contributed with the management of the investigative process, information search, data management, review of the articles and writing of the article. N.A.L.A. contributed to the management of the investigative process and the development of the investigation C.M.P.L. contributed with the search for information, review and writing.

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