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Systematization of Playful Teaching Using Games Aimed at Teachers and Students

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Abstract. The following research aims to systematize playful teaching to teachers and students of education, where, through four criteria that involve traditional education with modern teaching, the application of content is restructured to achieve significant learning with playful activities and dynamics that prepare, level, and teach students according to the curricular contents, in addition to creating evaluations by competencies that allow students to demonstrate their abilities in different contexts, thus being significant learning that motivates them, in addition to being a structure of progressive activities that develop information in phases from the simple to the complex. This research was applied virtually to teachers and students of education in general (inclusive, preschool, initial, high school, among others) to obtain results directly from the people who are active in a classroom, with data collection through surveys to be analyzed with quantitative methodology.

Keywords: Systematization · Game · Playful · Teachers

1 Introduction

During child development, the main skills are acquired and/or developed through games, dynamics, and stimulation. As they progress in their development, these games become more structured and organized with more analytical and specific development processes. However, in these last 3 years, they have gone through different stages in terms of education. Initially, we had a traditional education which consists of listening to the class, taking notes, or doing daily homework with some sporadic dynamics that break the routine. Later, as a result of the pandemic, it migrated to distance education, through technological tools; which caused a radical turn in the way of teaching, where there were some classes with more dynamics, others that tried to keep the traditional system alive, and others where only information was exchanged. Now today we can see how new normality is being resumed where there are dynamic classes, some with technology inside the classroom, others with structured material, and others that returned to the traditional with small changes in terms of their organization to change something as simple as the pencil for kinesthetic material or a demonstration experiment instead of theory.

For Suárez [1] childhood is a stage of life in which the creative sense in children is most developed, in the same way, Rodríguez [2] adds that students need to find a

use for what they learn in class that goes beyond school and, of course, connects what they study with what they live. For this reason, Suárez Palacio, Vélez-Múnera, and Londoño-Vásquez [3] add that, nowadays, innovative pedagogical processes, products of the creativity of those involved in the educational process, seek new ways of teaching and learning before a complex and dynamic world.

Following the same idea, Gómez-Vahos [4] infers that the main objective of education is to integrate academic content with the training of the person, so they have the option of intervening in the environment, understanding local realities and global from critical and reflective thinking; that is, give each person the opportunity to use individual skills as a source of support to achieve complete learning, where the teacher serves as a guide for these teachings, which are not limited to a classroom or a page. When learning many factors interfere that according to Monroy [5] are classified into two categories: the intrapersonal category, which refers to the internal factors of the student, and the situational category, these have to do with the variables of the environment, teachers and the situations in which learning takes place. Therefore, the simple fact of communicating a topic under a traditional education of only listening to the class and emptying this information in notebooks or the fact of making a dynamic in class to change the routine does not result in significant learning if these are not connected directly with the abilities of the students and the context in which it is presented.

Now, systematizing teaching processes to generate an evolution into the current needs of students, according to Bonilla [6] systematization in science serves to establish relationships between concepts (elaboration of theories), that still give rise to a moment of formulations, hypotheses, and laws related to each other for the establishment of logical relationships where significant learning is developed that allows the appropriation of the meanings of the experiences lived, understand them theoretically and move towards the future with a transforming approach [7]. To carry out a systematization of experiences Jara [7] consider: "Starting point: having participated in the experience and having records of that experience, questions that should be asked: why do you want to systematize the experience? What experiences do you want to systematize? And what central aspects of that experience would you be interested in systematizing? Recovery of the lived process: reconstructing the history, ordering and classifying the information, in-depth reflection: analyzing, synthesizing, and critically interpreting the process, arrival points: making the conclusions, announcing and presenting the learning through different means. (p.135)".

Similarly, when teaching is systematized as such, an experience is also modified where there must be initial analysis processes, development of the practice, and conclusions that give as a final result a complete experience that evolves into meaningful and valuable real learning for the students who receive it. With this panorama, the research of this article has a general objective to create a teaching system that mixes the traditional with games following a series of logical steps that gives, as a result, a teaching-learning that charges all types of learning, needs, and that can be applied as a basis in the evolution of the current educational system. Achieving in this way an education where the student always finds motivation to learn, the teacher has a paradigm shift using what he already knows, having only to add a logical order that allows him to expand the knowledge of his students.

2   Materials and Methods

A quantitative, exploratory, descriptive, and explanatory methodological approach is used, intending to describe each step of the systematization together with the experiences lived by the participants, as well as analyze to what extent this systematization favors teaching in general and how teachers can Apply it according to your area and population. The survey technique has been implemented since it allows tabulating and studying the opinions received from the respondents, for their conversion, inferentially, by the researcher, into useful information to consider in the investigation. Feria Ávila, H., Matilla González, M, & Mantecón Licea, S [8].

2.1   Participants

It was applied to a group of teachers and students, in online mode, taking into account that the participating students had previously consented to their participation, resulting in a sample of 157 participants belonging to Early Childhood Education, Primary Education, Social Education, and Inclusive Education; this sample is non-probabilistic, intentional and for convenience.
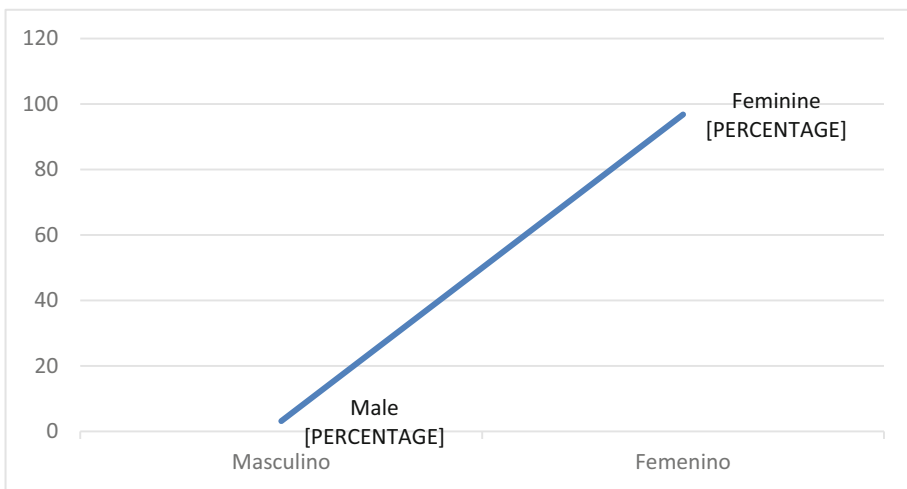
Fig. 1. Descriptive analysis of the sample by gender.

About Fig. 1, 97% correspond to women and only 3% to men. Figure 2 shows that more teachers participated (with 83%) concerning the number of students (17%).

The aforementioned data provide knowledge of the people participating in the application of said systematization, where 3 stages were carried out:

– Stage 1: Theoretical explanation of the importance of the game and how to systematize.
– Stage 2: Application of the systematization through examples
– Stage 3: Data collection with surveys of the participants.
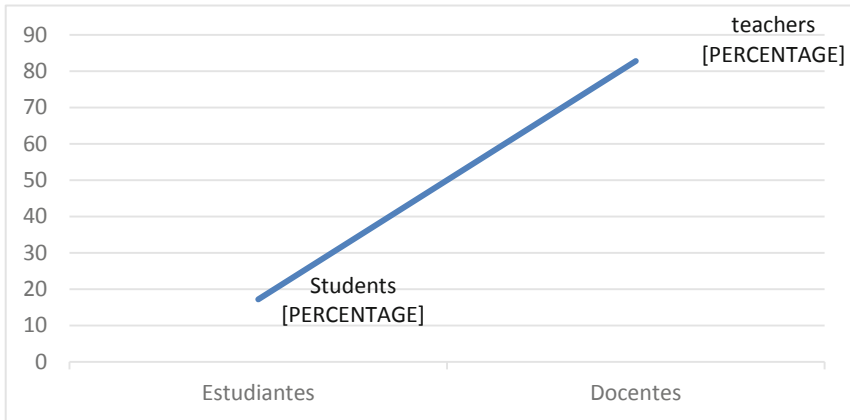
Fig. 2. Descriptive analysis of the sample by degree of study

3 Results and Discussion

The systematization of the professorial investigative results focuses its attention on the ordering, reconstruction, and explanation of the teaching-learning process, which makes it a dynamic process that integrates the logical and the contradictory, the internal and the external of the investigative results whether theoretical or practical, towards the search for new transformations that favor the cognitive processes of our students. Bonilla Tenesaca, J., Jiménez Álvarez, M., & Batista Medina, I. [9]. In this context, the development of the systematization of this research focuses on the sequence of a logical order that involves tangible media combined with the theory to achieve a teaching system with meaningful learning. This systematization is structured as follows (Table 1):

Table 1. Systematization scheme by criteria

Criteria	Definition	Activities
1- Preparation of students through the game	The previous content analysis focuses on preparing students and leveling out if there are deficits within the students´ group In the same way, motivate the student to be investigative and be aware of what they will learn and what this knowledge will be used for	Fun games related to the theme Tangible demonstrations with environmental elements Group work based on problems

Table 1. (*continued*)

Criteria	Definition	Activities
2- Creation of practical and playful activities	Practices similar to theory should be considered, which, in addition to demonstrating how they can develop the topic, also offer them additional information	Individual activities Use of tangible material Use of tools if these are necessary Practical activities are similar to the topic in question
3- Application of progressive material (theory)	Replace notebooks full of text with segmented templates where the importance of the different subtopics that generate any content is displayed throughout the class	Segment by day or subtopic Segment according to the dynamic to create Develop the templates through dynamics before filling them out Create base templates for their reuse
4- Evaluate through the game	Once the students have completed the process of preparation, practice, and theory, the evaluation should focus not only on answering questions in a written record but also on the skills obtained	Creation of a special activity to dynamically evaluate or reuse what has been learned by the student Considering a written record as evidence of knowledge adds to some of the segmentation taught above Consider evaluation by competencies in which the skills and requirements necessary to have achieved the objectives of the curriculum are divided

This systematization, although simple, gives a different perspective of how teaching is currently organized or established, whereas a first step is evaluated with dynamics, exercises, or playful activities and how prepared the students are to know this topic, where according to Gómez [10]:

In school, the essential thing is not to make or train researchers but to develop an investigative attitude in the students; it is about developing critical thinking in students with a scientific stance towards things so that they: problematize, ask and seek answers, develop an inquisitive attitude that enables them to build significant knowledge derived from problems posed.

Subsequently, the practical activity is established as a second step, not as a result of knowledge, but as an example of the activity, skill, or topic to learn, which can be useful in different contexts, as indicated by González and Márquez [11]. Actions generate learning opportunities for students and understanding learning opportunities as an indicator that connects teaching and learning. Here these steps are established on how to collect information and then be structured with practice.

Turning to theory as the third step, progressive templates are incorporated where note-taking is replaced with dynamics, an activity where each important aspect of development is delimited, in such a way that visually and more dynamically students can understand what they learn. With each segmentation, we elaborate staging with dynamics or playful development where what is wanted to be developed is explained more explicitly, as can be seen in Fig. 3, the simple idea of writing down everything is transformed into developing separate segments that provide an easy way to assimilate the information presented.

CENTRAL TOPIC	SUBTOPIC 1
SUBTOPIC 2	SUBTOPIC3

Fig. 3. Content targeting example

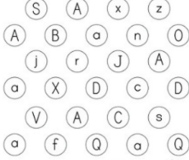Now, we proceed to exemplify the template to illustrate the aspects to which the segmentation refers:

Fig. 4. Exemplification of preschool-level content
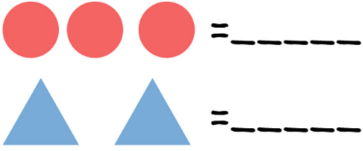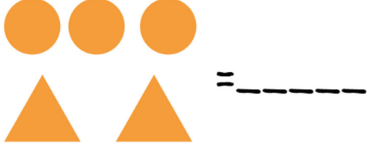
Fig. 5. Exemplification of the content level of basic education

As seen in Figs. 4 and 5, the idea is to prepare the content in a playful way where each section of the class has a dynamic focused on previous activities that can be recorded until the desired content is reached. Likewise, this is not considered a base limited to four parameters, since it is here that the teacher demonstrates his or her ability to coordinate previous skills until reaching the content so that each teacher can have a base that allows him or her to progress according to his or her teaching style.

Finally, a means of evaluation is established that is consistent with the game or dynamics carried out, where skills are measured and if a record of these is necessary, there are more options than just a written record, that is, evaluation by competencies. According to Quiñones, L., Zárate-Ruiz, G., Miranda-Aburto, E., & Sosa, P. [12], different phases must be implemented for the evaluation of competencies. The first was the competency-based approach to learning; with the subcategories: reasoning, creativity, and critical thinking. The second refers to a competency-based approach to teaching; with the subcategories: planning, learning management, and evaluation. The third was an evaluation of learning; with the subcategories: development of autonomy and increased confidence. The fourth and last was the evaluation of teaching, with the subcategories: attention to diversity and improvement of pedagogical practice. Similarly, S. Morales López, R. Hershberger del Arenal, E. Acosta Arreguín establishes that:

Assessment in competency-based education requires the teacher to determine the student's level of performance; however, the competencies are not observable by themselves, so it is necessary to infer them through specific actions that must be previously operationalized. The development of competencies in students must be verified in practice through clearly established performance criteria. The performance criteria refer to the expected learning results and represent the basis of the evaluation and the establishment of the conditions to infer the achievement of the competence.

For this reason, the systematization of teaching through games goes hand in hand with the evaluation of competencies, since the main objective is for the student not only to develop the skills but also to be evaluated consistently based on them, creating educational environments. Not only novel but that values the teachings provided by the teacher and the effort of the students. On the other hand, the participants of the application have completed a survey, focused on each step of the systematization as shown in Table 2.

Table 2. Systematization scheme by criterio

CRITERIA	ASSESSMENT		
	0 slightly favorable, 1 moderately favorable, 2 very favorable.		
1. Preparation of students through the game	**0**	**1**	**2**
1.1 Possible for all ages			
1.2 Possible for all subjects			
1.3 Ease of application and preparation			
1.4 Development of skills and knowledge according to the curriculum			
2. Creation of practical and playful activities			
2.1 Possible for all ages			
2.2 Possible for all subjects			
2.3 Ease of application and preparation			
2.4 Development of skills and knowledge according to the curriculum			
3. Aplicación de material progresivo (teoría)			
3.1 Possible for all ages			
3.2 Possible for all subjects			
3.3 Ease of application and preparation			
3.4 Using progressive templates for group activities			
3.5 Favorable development for all skills			
4. Evaluate through the game			
4.1 Possible for all ages			
4.2 Possible for all subjects			
4.3 Possibility of subdividing all competencies			
4.4 Ease of evaluation for the teacher			

The following results were obtained (Fig. 6):

As shown in Fig. 7, in the first item 1.1, 84 people answered that it is possible for all ages to prepare students through games and the other 73 answered that it is moderately favorable, that is, 53% of the people support this item for all ages. Next, in item 1.2, 82 people responded that implementation through play is very favorable for any issue, while the rest of the options are divided into 65 for moderately favorable and 10 for very unfavorable, that is, 52.2% were according to this option. Next, in item 1.3, 99 people responded that it is very favorable for its preparation and application, while 25 people indicate that it is moderately favorable and 33 people that it is very unfavorable, that is, 63.05% agreed with this option. Finally, in item 1.4, 106 people indicate that it is very favorable for the development of skills and knowledge according to the curriculum, while 46 people indicate that it is moderately favorable and only 5 people that it is very unfavorable.
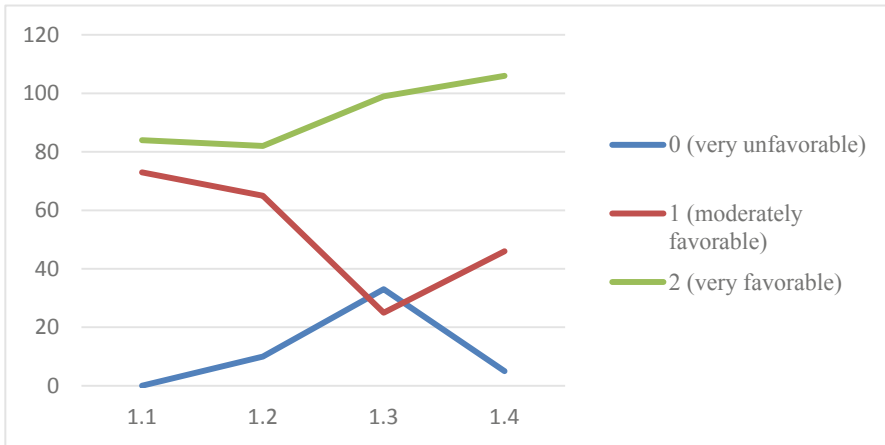
Fig. 6. Graph of results of criterion number 1 preparation of students through play.
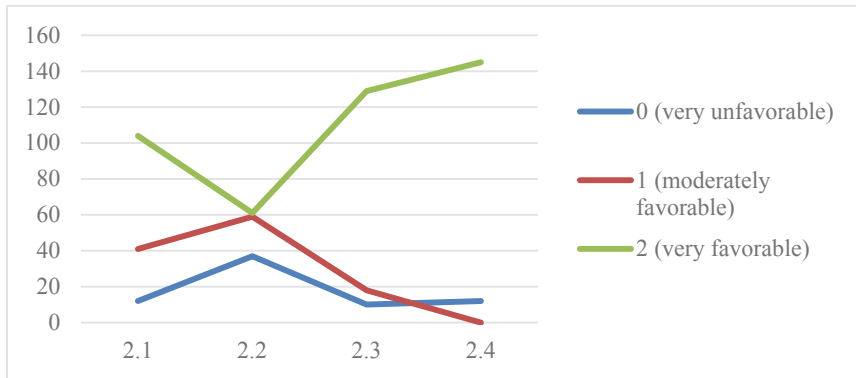

Fig. 7. Results graph of criterion number 2 creation of practical and playful activities.

In Fig. 8, the results of criterion number 2 creation of practical and playful activities are shown, where in item 2.1, 104 people indicated that it is very favorable for all ages, 41 people that it is moderately favorable, and 12 that it is very favorable. Unfavorable, that is, 66.2% of people agreed. On the other hand, in item 2.2, 61 people indicated that it is very favorable for all topics, 59 people indicated that it is moderately favorable and 37 people that it is very unfavorable for all topics. In item 2.3, 129 people indicated that the preparation and application are simple, 18 people indicated that it is moderately favorable and 10 people that it is not very favorable. Finally, in item 2.4, 145 people indicated that it is very favorable for the development of proposed knowledge, while the rest (12 people) indicated that it is very unfavorable.

In Fig. 9, the results of criterion number 3 application of progressive material (theory) are observed, where, in item 3.1, 99 people indicated that it is favorable for all the topics, 54 people indicated that it is moderately favorable and 4 people that very unfavorable.
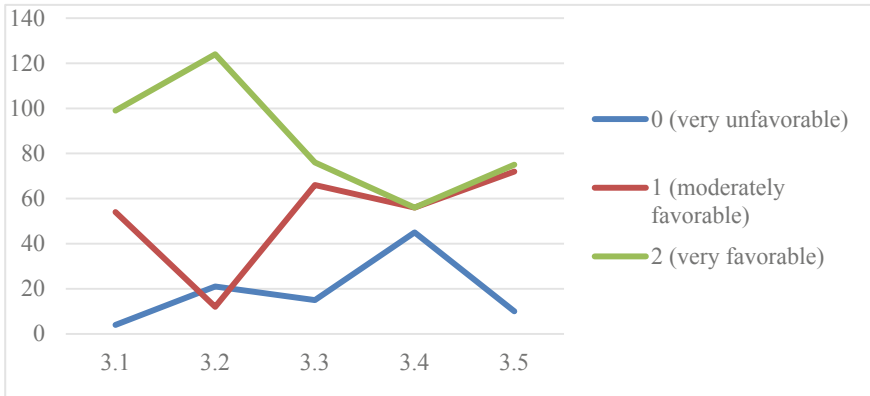
Fig. 8. Results graph of criterion number 3 application of progressive material (theory).

In item 3.2, 124 people indicated that it is favorable for all the topics, 12 people that it is moderately favorable and 21 people that it is very unfavorable. In item 3.3, 76 people indicated that the reuse of templates is favorable, 66 people that it is moderately favorable and 15 people that it is very unfavorable. In item 3.4, 56 people indicated that the use of progressive templates in group activities is very favorable, 56 people that it is moderately favorable and 45 people that it is very unfavorable. Finally, in item 3.5, 75 people indicated that it is very favorable for the development of activities, 72 people that it is moderately favorable and 10 people that it is very unfavorable.
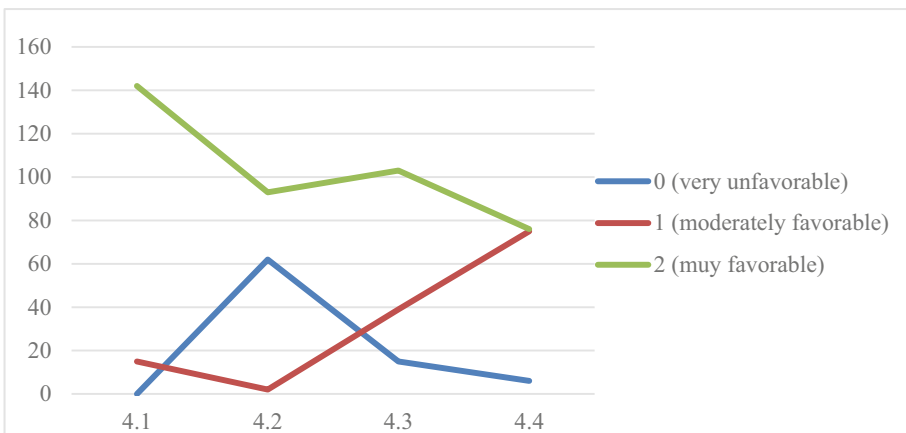
Fig. 9. Graph of results of criterion number 4 evaluated using the game.

In Fig. 9, the results of criterion number 4, evaluated through the game, are observed, where, in item 1.1, 142 people indicated that it is very favorable for all ages and 15 people that it is moderately favorable. In item 4.2, 93 people indicated that it is favorable for all ages, 2 people indicated that it is moderately favorable, and 15 that it is very unfavorable.

In item 4.3, 103 people indicated that it is very favorable to subdivide the students' competencies, 39 people indicated that it is moderately favorable and 15 people that it is very unfavorable. Finally, in item 4.4, 76 people indicated that it is very favorable for the ease of teacher evaluation, 75 that it is moderately favorable, and 6 that it is very unfavorable.

4 Conclusions

As previously mentioned, the objective of this research is to systematize teaching through games to show a structure that involves traditional education with modern teaching where the main source to acquire knowledge is practice and preparation for later be unified, organized, and classified through theory, where note-taking or extensive writing is replaced by micro activities that give tangible knowledge of each sub-topic that the main topic to work on could have, wherewith these preparations and systematization skills are achieved and knowledge of agreements to the curriculum and objectives set by each teacher, which results in evaluations based on structured competencies that cover all possible areas to analyze the performance of both the teacher's methodology and the skills obtained by the student.

Similarly, as this is an application directly proportional to teachers and students in the area, the answers obtained are a vision of how this topic could deepen and improve to provide a comprehensive evolution to current education, where the student throughout the classes investigate, collect, organize and apply the information received, being a continuous and active work and not an overload of information that is only captured on an exam sheet or notebook.

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