

Challenges and difficulties reported by former members of scientific theater groups on the use of theater as a didactic tool

Francisco Furtado Tavares Lins¹, Anne Gabriella Dias Santos Caldeira².

ABSTRACT

The text discusses the use of theater as an educational tool, focusing in particular on science-themed theater for teaching chemistry. This method aims to make scientific concepts accessible through shows that combine art and pedagogy, promoting interactivity and creativity between students and teachers. The results of the research reveal that former members of science theater groups face significant challenges when implementing this methodology in schools, such as the demand for adequate time and resources. Despite the difficulties, scientific theater is recognized by the interviewees as a powerful way of enriching learning, stimulating both teaching and learning in a contextualized and dynamic way.

Keywords: Scientific theater, Didactic resource, Teaching chemistry.

INTRODUCTION

Theater is an art form that allows people to explore and understand the world in a different way. In addition to being a form of artistic expression, theater also offers several benefits for education, both for students and teachers. Theatre encourages creativity and imagination, improves communication and verbal and non-verbal expression and helps develop self-confidence and self-esteem. Theater, being a collaborative activity, requires teamwork, offering a series of benefits for education, culture and the promotion of diversity and inclusion. Participating in theatrical activities helps develop important skills, such as communication, collaboration, problem-solving, and empathy. For these reasons, theater should be valued and included in schools as an important activity for the development of students (EDUCA MUNDO, SD).

For Saraiva (2007), science-themed theater encompasses shows that take place in museums and science centers or in schools, with the concern of addressing scientific themes in a pedagogical aspect. The shows address scientific concepts, often complex and complicated, aiming to make them more accessible, later sending the discussion to the classroom. According to Neto (2021), the use of scientific theater as a pedagogical intervention does not portray the replacement of expository classes, but the implementation of didactic resources that can arouse curiosity, bring students and teachers together in creative tasks, enhance creativity, promote a dialogical space, among other experiences. These actions seek to consolidate a proposal contextualized with the interests and needs of the students, replacing

¹ State University of Ceará (UECE) / Faculty of Education of Itapipoca – Ceará

² State University of Rio Grande do Norte (UERN) – Rio Grande do Norte



traditional practices of memorization of laws and concepts, passivity and little stimulus for the learning of scientific content.

This study deals with the scientific theme theater as a resource for the teaching of Chemistry aimed at the collective construction of knowledge in the academic context and teacher training. The present research had as its target audience former members of scientific theater groups who currently practice teaching as a profession. The objective of this proposal was to carry out a theoretical-methodological approach through data collected in a structured interview with the participants about the use of scientific theater as a didactic tool and to list the challenges and difficulties in the use of this educational methodology. As a result, a positive contribution was obtained regarding the use of theater with a scientific theme in the context of pedagogical didactic methodologies, but very challenging.

The initial and continuing training of teachers provides a moment of reflection on the guidelines that education has provided to teachers and, therefore, reflect on the possible practices for the training process. As an alternative for didactic procedures, one can think of using theater with a scientific theme as an innovative tool to be applied in the classroom in scientific areas.

MATERIALS AND METHODS

As a methodological path of this research, the methodology of qualitative research of an interpretative nature was adopted, which, among data collection techniques, relies on the interview guided by a script of questions, aiming to expand analytical possibilities in a relationship between interviewer and interviewee configured by an authentic discursive genre (CASTRO, 2022). This study aimed to develop a qualitative research with the application of questions as a data collection instrument to former members of theater groups with scientific themes and who teach in elementary and high schools in Mossoró-RN and Itapipoca-CE. It is worth noting that the participants of this research were instructed to read the free and informed consent form and only after agreeing and signing the term, did they participate as subjects of this research.

The questionnaire consists of open questions and was applied online, through a digital form on the *Googleforms platform*. The online modality was chosen because it operationally facilitates the obtaining of answers, since it does not require physical scheduling with the interviewees. The answers were analyzed in an interpretative manner based on the published literature.

RESULTS

The questionnaire was applied to 35 teachers who participated in science-themed theater groups during their academic graduation at the State University of Rio Grande do Norte (UERN) and at the Faculty of Education of Itapipoca (FACEDI-UECE). Through the answers obtained, it was possible to



identify some challenges and difficulties that they presented to put into practice scientific theater as a didactic tool in their chemistry classes.

The interviewees were asked how they used, use and/or would use scientific themes in a theater format as a didactic tool for teaching Chemistry. Analyzing the answers obtained in a generalized way, it is perceived that, for the research participants, the use of scientific theater can incorporate practical and experimental demonstrations of Chemistry live, providing a more interactive experience to students, which may include Chemistry contents, manipulation of laboratory equipment and reagents, observation of chemical phenomena reinforcing concepts through practice, stimulate the creative and leading process of students, research in search of problem resolutions and teamwork. Employing theater as a didactic resource is a way of demystifying chemistry and its teaching-learning through the playfulness incorporated into theater.

"Scientific theater could be used as a way to complement the contents, favoring student learning; Address important historical moments for chemistry; Work on the concepts of chemical reactions, atomic models, practical use of glassware and reagents. It could also be used as a form of subjective evaluation to close the contents".

"I have already used the experiments I learned in scientific theater, but I have never performed a play with my students, I am interested in doing it, but a project like this requires a lot of time, which prevents it from being carried out. But if he were to do it, he would use stagings that told a little of the story of a scientist who had great relevance to humanity. This way students would learn more about the lives of scientists and their creations and disseminate it to the entire school community".

The answers mentioned above show the apprehension of important dimensions for learning, such as group work, communication and appropriation of symbols. Not only does it recognize the possibility of learning, but it also lists points specifically present in the field of Chemistry, loaded with symbologies and peculiar language due to the abstract world. For Vygotsky (2001), art is configured as an expression of language and has a cognitive function, mediating thought and interaction with the world as an instrument of transformation and development of higher psychological processes.

The interviewees were also asked what are the challenges and difficulties, in their understanding, of the use of scientific theater as a didactic resource for the teaching of Chemistry. In general, they presented as challenges the demand for time for planning, which requires a good preparation of the script and theatrical staging to present the concepts of chemistry; Difficulty in including it in the content scheduled for the school year; Lack of material support in schools; Lack of incentive and support from institutions.

"Preparing and performing theatrical plays with scientific themes can require significant time and resources, as well as finding a way to motivate students for the process".



"Positive points: contextualized learning, integrated scientific content, connection with others, self-knowledge, engagement, responsibility, development of orality and stage presence, strengthening of self-confidence and public speaking; Negative points: it requires investment, production time, preparation and rehearsal, it needs committed and firm people, physical, material and financial resources for events and activities in general; institutional support; attitudinal barriers on art and science".

Considering that the individual's ability to create, improvise and solve problems is awakened when he is involved in challenging situations, which require a quick solution, it is precisely in this type of impulse, he needs support and material resources to be able to create and implement something new. Going beyond one's own conveniences and surrendering oneself utopianly to the moment of creation impels the subjects to develop their creative capacity, which from the perspective of the teaching profession assumes a preponderant function. Such creativity, in turn, requires financial and material resources, time for execution and institutional support. Freire (2008) corroborates the idea of creativity necessary for transformative practice, from which the political-pedagogical character of education also emerges.

FINAL CONSIDERATIONS

Used as a resource for scientific dissemination, the theatrical language used in theatrical scripts can be an important form of training for the participants of this teaching-learning procedure. The study presented in this work aims to identify the challenges and difficulties encountered by the interviewed teachers in making use of the scientific theme theater in the area of Chemistry as a didactic resource and to contribute to the teaching-learning process of the contents of Chemistry through the interdisciplinarity between science and theater. Although the use of theater for the teaching of chemistry has not been configured as a possibility of didactic resource, theater has great importance in the classroom, as it encourages group work, as well as helps the student to express himself through speech and symbols, exposing ideas and feelings. Being approached in an educational context favors the student a better understanding of the content pointed out, which may not have been understood when approached in a traditional class. The teachers who answered the questionnaire have a positive view of the use of the science-themed theater to disseminate Chemistry, for use in the learning of chemical concepts, but reported several challenges and difficulties, making this practice practically unfeasible to be developed in the schools they teach.



REFERENCES

- Castro, E., & Oliveira, U. T. V. (2022). A entrevista semiestruturada na pesquisa qualitativa-interpretativa: Um guia de análise processual. *Entretextos*, 22(3), Jul/Dec.
- Educa Mundo – Educação sem fronteiras. (n.d.). Retrieved June 19, 2024, from <https://www.educamundo.com.br/blog/beneficios-teatro-na-educacao>
- Freire, P., & Shor, I. (2008). *Medo e ousadia: Cotidiano do professor* (12th ed.). Paz e Terra.
- Neto, J. S. C., & Coelho, I. M. W. S. (2021). O teatro científico como recurso metodológico para o ensino de Física e a formação docente. *Experiências em Ensino de Ciências*, 16(1).
- Saraiva, C. C. (2007). *Teatro científico e ensino da química* (Master's thesis). Faculdade de Ciências, Universidade do Porto. Retrieved July 14, 2023, from <http://nautilus.fis.uc.pt/cec/teses/claudiasaraiva/docs/tesecompleta.pdf>
- Vigotski, L. S. (2001). *Psicologia da arte* (2nd ed.). Martins Fontes.