Original Article

A Dragon with 19 Flying Wisps: Arts and Language for the Development of Educational Multimodal Material Aiming at the Resilience and Holistic Development of Children: An Inclusive and Multicultural Approach

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ABSTRACT

The present research highlights the negative effects of the COVID-19 pandemic crisis on the entire population. However, greater signs of stress and inadequate self-management of children's emotions have been reported during childhood. This study aimed to design and implement an educational intervention titled "A Dragon with 19 Flying Wisps," targeting preschool students with typical and non-typical development. The ultimate goal was to promote students' mental health, help them manage their emotions during the pandemic, and support their overall development. The ethnographic method was employed, allowing for data collection through various means and facilitating multi-level data exchange and interaction. The study sample included 210 students, with 159 exhibiting typical development and 51 attending special schools or inclusion classes. The intervention yielded several positive outcomes, including student engagement, the tool adaptation into an inclusive resource for students with disabilities, the incorporation of new technologies, the academic advancement of schools, and the creation of a more supportive environment for managing pandemic-related challenges and students' emotions effectively. In conclusion, the intervention successfully achieved its goals and sparked interest from other schools, leading to its expansion beyond the initial implementation. This positive response can be attributed to the intervention's design and the chosen research methodology.

Introduction

In recent years, the profound systematic efforts have been observed to apply art in education [1,2]. In formal education, arts are included either as distinct teaching subjects or as means of teaching non-artistic academic subjects [3,4].

The definition of the arts as means of teaching (*i.e.* teaching through the arts) seems to be constantly gaining ground [5-7], since the multiple benefits of the arts are highlighted in

the corresponding literature, both in terms of academic performance and, in general, in children's development [8,9].

For a long time, it has been documented in literature that creativity, imagination, expression of ideas, aesthetic understanding and its pleasure are placed as the secondary educational factors, despite their importance [10].

Thus, ways are sought to improve arts inclusion practices within curricula [11]. The arts acquire a wider pedagogical value, as they are inextricably linked to social consciousness and human life. They contribute to the cultivation of the person's emotions, and mental and sensory functions.

They offer possibilities that facilitate the developing person to turn into a sensitive receiver, as well as a transmitter of aesthetic messages, connecting the arts and the aesthetic dimension of the environment in which he lives, with the quality of his life [12, 13].

Thus, they can form a strong foundation for the child's development and contribute decisively to the teaching practices of education with the aim of the all-round development of the individual.

Although in recent years significant efforts have been made to integrate the arts into education, there is a significant research gap in the use of literature in preschool education, the use of digital books, digital games and digital educational materials in general, as well as the use of the above items for the promotion of student's mental health and inclusive competence.

Concerning the above- mentioned items, the purpose of the present study was to promote mental health for self-management of emotions and smooth social-emotional development during the pandemic period.

Particularly, through an ethnographic intervention, the study of the student's response to a literary multimodal intervention designed for the needs of the present study was sought.

Materials and Methods

Method Selection

The chosen method for this study was ethnographic, as it provided the research team with a comprehensive understanding of people's beliefs, attitudes, perceptions, ideas, and experiences. The ethnographic approach not only facilitates data collection, but also promotes active participation and collaboration between researchers and participants, resulting in multiple benefits for both parties. Data collection methods included participatory observation, semi-structured interviews, informal discussions, and the collection of material artifacts.

The interview guide was structured into five thematic sections. The first section focused on student engagement in the learning process, while the second section examined inclusion and students' mental health during the COVID-19 pandemic. The third section explored the role of digital educational materials in achieving the study's objectives, and the fourth section investigated the impact of academic extroversion during the pandemic. Finally, the fifth section centered on students' emotion management, mental health, daily life, and interpersonal relationships.

Participatory observation involved the use of a template, and in line with ethnographic research practices, material artifacts were also collected for further analysis.

Research Questions

From the study of the recent literature, the following research questions emerged:

(1) Did the student's involvement in the learning process increase with the use of the educational intervention material?
(2) Is the inclusion competence of students developed through digital, interactive multimodal educational tools?
(3) How does the digital display of educational material contribute to the learning process of heterogeneous groups of students?
(4) How could academic extroversion contribute to the interconnection of the school community in times of crisis?
(5) How was the smooth emotion management of students carried out through education using inclusive educational tools?

Sample

The study sample consisted of 210 students, 17 from the Peloponnese and 193 from Attica, 43 boys and 167 girls. Of the students, 159 were of typical development and 51 attended special schools or inclusive classes. Frederick University, the Greek Ministry of Education and Religion, the theatre group of actor Yiannis Zouganelis, the Methoni Kindergarten of Messinia and the 1st Kindergarten of Cholargos were involved in the ethnographic process as members of the research team. The followed sampling method was convenience sampling by exploiting the possibilities of access to structures through the collaboration of the research team members.

The Interventional Project

The intervention material was a fairytale, which described a dragon with 19 flying wisps who visited an imaginary city. In the story, a complete description of the everyday life of the citizens was presented before and after the restrictions set by the governments during the COVID-19 pandemic crisis.

The readers could also see the advantages and disadvantages of a profound deviation from normality and their effects, mainly on the psycho-emotional state of the characters. The ultimate goal of the story was to promote resilience, empower the readers, and prepare them to be psychologically resistant to any possible future crisis.

Research Process

The initial step in the implementation of the project, after designing the research program, was securing the necessary permits and pilot testing the interview guide from 21 interviews with students (10% of the total sample), in which the questions were tested. The pilot test resulted in changes and corrections mainly at the verbal level to make the questions more understandable.

Firstly, the Frederick University research team delivered the educational tool to the schools and participatory observation began before the intervention, and then the educational intervention was carried out while the participatory observation continued at the same time.

After that, the data collection was completed with semi-structured interviews and the collection of the material artifacts. The training program took place from October 2020 to February 2022. The prescribed principles of ethics and ethics were respected throughout the research.

Results and Discussion

Results from the Interviews

Regarding the questions about how much the fairytale sparked the interest of students, helped to develop cooperation among them and raised the willingness to create a project together, the participants answered positively.

Indicatively, P2 mentioned "I liked the story very much and I told it to my dad and mom as soon as I got home", while P7 said that "As soon as I got home, I wanted to watch the video with the storyteller again".

Regarding the collaboration and the creation of a project, they indicated that "It was very nice that we all did together things and we deserved a round of applause" (P124), "Our teams were very nice... we worked well and did nice things for the fairytale" (P205).

To the question about whether the children accepted their other classmates who were facing some type of disability, the students answered: "It is not fair that we have our book and the other children who cannot read do not" (P58), "As well as we have a fairy tale, children who cannot see and children who cannot hear should also have it" (P69).

When asked what they liked more about storytelling, they answered that the use of new technologies piqued their interest and increased their attention.

More specifically, they reported that the "Storyteller we heard in the video was really good... I liked it... can we watch it again?" (P8), "I liked the video because it wasn't boring" (P147), "Fortunately, there is a video and we listened to the fairytale" (P208), "I liked the video with sign language because I learned how

I can say "The dragon with the flying wisps is like using the sign language" (P106).

Next, they were asked what they liked most about using the digital book. To this question, all the participants answered positively, saying that it was an action that filled them with satisfaction since they gave a new material existence to the fairytale. As they characteristically said, "Now everyone, wherever they are, can read the fairytale and even with pictures" (P5), "Now I can read it whenever I want at home and the grandparents can see it too" (P14), "I like that now the author can see his story with our drawings" (P1).

Likewise, regarding the digital book as a technological means, they seemed to have no difficulty, since they had become familiar with such digital means, both because of the distance teaching that was applied at that time, and because of the family support at home. Indicatively, they mentioned "The digital book was not difficult for me at all... I had my mum to help me" (P30), "It is easy... I can do it on the tablet by myself" (P41), "I can play with the digital book all alone, but my dad do not let me open the tablet to your page (school blog) when he is not next to me" (P52).

Finally, the last group of questions concerned emotion management and conflict management. More specifically, they reported that they managed more effectively their fear and feeling of confinement due to quarantine, stress, and the unknown. They presented their family as adults who could make them feel safe, while school was the place where they would hear the whole truth. As P203 typically said "I know that I have my mum and my dad for everything I need..." while P163 "Here at our school we learn everything as it is... not fairytales". Furthermore, fear was presented as a normal feeling that children can manage "Everyone is afraid... but I know what to do if I get sick or something else... I will ask for help..." (P172).

Results from Participatory Observation

Through participatory observation, it was possible to examine the qualitative characteristics of the intervention before, during, and after its completion. These characteristics are related to the degree of involvement, the inclusive character of the teaching intervention, the way of using new technologies, as well as the way of managing conflicts. The interaction with the participants provided data on their development on a cognitive, social, and emotional level.

In particular, it was observed that before the intervention the children had insufficient awareness of the effects of the pandemic on a social-emotional level. First, an exploratory discussion about the pandemic took place. It was observed that before the intervention, they knew that it is a contagious disease and how it is transmitted from one person to another. They resented the pandemic talk as something they were tired of hearing from adults all the time. They said they knew the protective measures to avoid transmission of the virus and the effects of the disease on physical health, especially of elderly people and adults.

However, it appeared that they were unaware of the impact of the disease on the individual's psyche and daily life, whether for adults or children. They were completely ignorant of the difficulties faced by people with disabilities.

Moreover, after a discussion about exploring children's pre-existing knowledge and experiences, it emerged that there had been no previous discussion about how they emotionally experienced the confinement, the illness, or the risk of transmission.

During the educational intervention, they began to show a special interest in the topic of the pandemic, since it touched upon issues related to their experiences through their family environment and their daily lives. They identified with the hero of the fairytale, that is the child, and they immediately matched the face of the dragon with the coronavirus pandemic. They listened attentively, as evidenced by questions during the narration such as "What happened..., who spoke..., what did the child want to say...".

This gave rise to new activities such as illustrating the story and creating a digital game, and then after completing the digital storybook, they asked for an even more fun way to engage with the storybook, both during and after quarantine.

In the implementation of the educational intervention in schools in Athens, the children, in addition to the above activities, delved into issues concerning people with disabilities. The occasion was the children's contact with pharmaceutical material and the Braille writing on them (medicine boxes, etc.), visual material (weather report excerpts in sign language) during the storytelling, which had been enriched with tactile, visual and audio material. The children showed solidarity for people with disabilities and wanted to cooperate in creating new material that would be suitable for children with disabilities.

Therefore, they created a multi-sensory book with QR - code and a CD for the digital material, as well as a book in PECS format and a persona doll. The presence of classmates with disabilities made the children's support even more imperative. They further looked for a way to communicate with able adults to translate the fairytale into Braille and Greek sign language and create tactile material both for themselves and for children with disabilities.

The educational intervention was also characterized by extroversion, since they proposed turning the fairytale into lending material for the children of both the same school and other schools.

Hence, they sent an invitation to special schools for the blind, deaf, and hard of hearing, and deaf-blind children and sent the material through a representative. The fact that a child from another school would visit them to receive the materials excited them and they immediately wanted to appoint their representatives to give the materials. It is worth mentioning that the children after meeting the disabled child, when asked to describe him to their classmates who had not seen him, did not mention his disability (deaf), but other external characteristics such as "He had blue eyes... his eyes were laughing... he was tall... he had blond hair... he greeted us... he was kind... he wore blue overalls... he was with his mom outside the school door and we gave him the dragon box...".

Online meetings were then held with the children of the special schools who borrowed the material and exchanged opinions. The children with sensory disabilities said they liked being able to handle the story in a variety of ways which were very appealing to them.

Results from Material Artefacts

The fairytale during the research process was turned into a teaching object, which received a differentiated form coming from the participants themselves.

The students, in collaboration with the teachers, turned it into a digital book, illustrated it and created educational material that is a digital game and a printed multisensory book in an inclusive format, intended for teaching students with physical, sensory, and mental disabilities.

Furthermore, the fairytale was enriched by a dragon persona doll, which was a trigger for the development of drama activities where children could express their ideas and experiences. Additional material artefacts that emerged during the ethnographic process were the rendering of the textual meaning in Greek sign language and Braille writing.

Visual constructions using various materials and visual techniques, as also dramatized narration by well-known actors in the form of videos emerged.

Discussion

Based on the data collected through interviews, participatory observation, and the creation of material artifacts, this study confirms previous research findings on the contribution of arts to the educational process.

Specifically, in formal education, arts are integrated either as distinct subjects or as a means of teaching non-artistic subjects. In this study, an innovative approach was taken to teach medical subjects related to the pandemic and the transmission of the coronavirus by incorporating elements from the science of psychology, such as stress, mental resilience, and emotion management of students. The literature highlights the numerous benefits of arts, not only in terms of academic performance, but also in overall child development, as observed in this study, where significant improvements were seen in various

aspects of development, behavior, and social interaction.

In addition, the literature has long recognized the importance of creativity, imagination, expression of ideas, aesthetic understanding, and its pleasure in education, despite their secondary focus. This study emphasizes the prioritization of these factors and their practical application in daily educational practice, highlighting their significance and positive contributions.

The findings from student responses and the research group demonstrate the positive effects of using fairytales in the cognitive domain, especially when teaching complex subjects to students of a specific age group. The study also reveals increased engagement in learning, improved emotion and conflict management, and a holistic positive impact on students' developmental journey.

While the benefits of arts and literature are well-documented in previous research, what sets this study apart is the innovative use of the ethnographic method, which proved to be both exploratory and educational for all participants.

Furthermore, the concept of multimodality was integrated into the fairytale approach, making it an inclusive educational tool that yielded positive results for both typically developing students and those with diverse needs. In addition, the students acquired inclusive competence skills in an experiential way and communicated effectively within heterogeneous groups.

Finally, the data showed that the integration of new technologies in art and inclusive education gave a greater boost to students' motivation, enhanced the increase in learning engagement, and created feelings of joy and satisfaction [13-22].

Conclusion

From the present research, it is evident that there is a significant gap in the development of educational materials that align with modern social realities and embrace inclusivity, multimodality, and the use of new technologies. Traditional school systems often operate as closed systems, adhering to a monocultural model of education.

However, following the implementation of the fairytale educational intervention, which encompassed the aforementioned characteristics, positive effects were observed in mental health and overall development of the students.

Cognitively, the students successfully grasped and comprehended complex topics such as the pandemic, virus transmission, and mutations, despite their age. On a psycho-emotional level, they exhibited significant improvements in anxiety and fear levels, which were influenced by the pervasive media coverage and conversations with adults.

Socially, they demonstrated inclusive competencies and transformed the crisis period into an opportunity for further skill development. Moreover, the data from this study indicated an increased engagement of students in the learning process through the utilization of the intervention materials.

The inclusivity fostered by digital, interactive, and multimodal educational tools, as well as the digital presentation of educational material, positively contributed to the learning experience of diverse student groups.

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