

Game of Trot: what if Trotula de Ruggiero came back from the Middle Ages to show us a sustainable and inclusive future?

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Abstract: This paper defines a stage in a research itinerary that aims to investigate the mediological constellation of the Trotula educational project. The initiative is inspired by the figure of Trotula de Ruggiero, a doctor from the 11th-century Salerno Medical School and a scholar of women's bodies and psyches. In particular, the project targets children and the educating community to facilitate and support the acquisition of social, emotional and cognitive skills (Stefanini, 2013). Since its inception, the project explores and experiments with the potential and resources of various communication channels to build (and then provide) a network of media, languages and tools that operate in an interconnected manner. Embracing, not without fear, what Edgar Morin defines as 'the challenge of complexity' one operates taking into account the interactions, uncertainties and contradictions that the educational adventure poses. It certainly seems an arduous task to isolate and investigate a portion of a whole, in which the strength lies precisely in the interdependence of the tools; however, this article focuses its investigative focus on the videogame Game of Trot. Trotula de Ruggiero straight from the Middle Ages, becomes the Player Character that offers children the opportunity to explore, learn and create.

Keywords: Transmedia Education; Video Games; Inclusion

1. Introduction

"I want the men and women of today to be able to make a connection with the past by considering the tragedies and sufferings, the cruelties and hatreds, but also the hopes, love and beauty of the people who have disappeared" (Zemon Davis, 1980). We start from this invitation by the American historian to introduce the protagonist of this playful-educational adventure. The historical figure we will refer to is Trotula de Ruggiero, from whom the Trotula project takes its cue. Before delving into the factual project aspects, it seems necessary to introduce this historical figure to explore the complex fragments of a kaleidoscopic educational project, acted rather than planned.

Trotula de Ruggiero lived in Salerno in the 11th century, belonged to a noble family of Longobard origin and was a doctor of the Salerno Medical School. Certainly, many aspects of Trotula's life are shrouded in mystery and, over time, a kind of denialism has obscured this emancipated, humane and deeply cultured woman (Boggi Cavallo, 1979). Several texts on women's health and body care are attributed to her: *De passionibus mulierum ante, in et post partum*, also called *Trotula major* and *De ornatu mulierum*, known as *Trotula minor* (Greco, 2020). Admittedly, the story of this character has turbulently traversed the centuries, constantly oscillating between the representation of myth and the investigation of reality and also collecting apologists and detractors from time to time. But is it not the stories, even the verisimilar or even the improbable ones, that unite people and form communities? In his latest book *Nexus*, Y.N. Harari investigates how stories have created, from *homo sapiens* onwards, large-scale human networks, effectively laying the foundations for great human cooperation. As Kendall Haven writes in her 2007 book *Story Proof. The Science Behind the Startling Power of Story* (p.122): "Human minds [...] rely on stories and the architecture



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of stories as the main orientation tool for understanding, making sense of, remembering, and planning our lives [...]. Lives are like stories because we think in terms of stories. ". In practice, according to Haven, narratives are a very effective tool for communicating factual, conceptual, emotional and implicit information. The story of Trotula de Ruggiero, therefore, becomes the starting point of a pedagogical and dialogical journey that is rooted in the past, speaks to the present and plans for the future, and that involves both children and the educating community. Was Cicero not right when he said that 'history is the teacher of life', highlighting the pedagogical role of knowledge of past events and characters in shaping our human experiences? Historian Zemon Davis, in her dialogue with Denis Crouzet (2007), gives us the suggestive, almost dreamlike vision of jumping between the trampolines of traces left here and there by the past, in order to create a space, critically sifted with possibilities, in which to weave a narrative of the probable. This suggestion becomes the 'game' into which we have dived in the conception and development of the Trotula project; and the game, in fact, is one of the pieces that make up the project's puzzle... but let us take a step back to explore this educational adventure.

2. Intersectorality and territorial enhancement

With Trotula, we are not dealing with a historical undertaking or a fine philological investigation, but with a creative project capable of educating and inspiring children using a communication that oscillates between fairy tale and historical tale. In fact, using the expedient of the illustrated character, Trotula directly from the Middle Ages has been brought back to life to tell her story and convey the values that emerged from her writings and her experience. The story that Trotula tells in the first person directly from the year 1000 (and its surroundings), is addressed to everyone and stands up in defence of the right to believe in one's dreams and to be happy, dealing with topics such as friendship, teamwork, women's emancipation, the importance of study and research, hospitality, respect for nature and care. A dear reference to the goals of the 2030 Agenda (UN, 2015), which appear urgent and fundamental for the well-being and growth of individuals within communities.

The Trotula project has as its vision a world in which every child, regardless of context, is able to explore their full potential, activate individual empowerment processes and internalise a value system that shapes society. A not wanting to renounce the utopia of a better and fairer world, which winks at the theories of Paulo Freire who states that one of the primary tasks of radical liberating critical pedagogy is to work for the legitimacy of the ethical-political dream of overcoming unjust reality. It is to work for the genuineness of this struggle and the possibility of change. (Freire, 1968) The reference to Freire's theories reveals the desire not to surrender to a deterministic view of history, and therefore to strongly believe that the future can be shaped by the choices we make in the present, especially with the new generations, and therefore advocates an emancipatory pedagogical process, critical literacy and socio-emotional education. The complexity of the objectives calls for a multiplicity of tools and a plurality of fields of application, becoming an educational experience that cannot be carried out within the confines of disciplinary fences with compartmentalised and crystallised knowledge, but almost naturally overflows and overflows the banks. In fact, the project is transversally embedded in the fields of media, history and pedagogy disciplines. In particular, the intersection of these three aspects becomes an excellent resource for the enhancement of territorial identity.

Trotula, as an expression of the Salerno territory, aims at fostering the realisation of an innovative frame in the field of Education by contributing to the valorisation of Salerno's historical and cultural heritage, the representation of educational themes and transmedia narration. This project, conceived as a bridge between the past and the future, creates opportunities for dialogue between different areas of study, integrating historical knowledge on the Salerno Medical School, pedagogical approaches that foster children's empowerment and a media analysis of the different forms of media used. Can a woman from a thousand years ago become a contemporary, educated, generous and daring protagonist of an interdisciplinary enterprise? To answer this question, it is appropriate to integrate the theoretical aspect and the pragmatic moment, which, to be fair,

appeared separate in the first part of the project. In particular, the empirical experimentation of tools was privileged over the theoretical systemic investigation, but now the ergon and the logos cross each other, contaminate each other and do the research path with solicitations and keys. It seems useful to explore the plurality of mediological representations used so far in a punctual but not exhaustive manner. The starting point is the fable.

1. The simple structure and archetypal characters of the fairy tale facilitate understanding of reality and support learning, language development and narrative thinking (Bruner, 1996). Furthermore, illustrated representations of fairy tales, such as the picture book 'Trotula and the Enchanted Garden', stimulate imagination and visual learning (Campagnaro et al., 2013).

2. With the aim of ensuring accessibility for students with different communication needs, Trotula's fairy tales have been translated into English and German and will soon be published in an inclusive book (IN-book) using Augmentative and Alternative Communication (AAC). In addition, the publications are also in audiobook version and audio streaming platforms feature readings of episodes from Trotula's adventures. These tools prove extremely effective in making fairy tales accessible in various contexts; indeed, reading aloud is recognised for its cognitive, emotional and relational benefits in children (Batini et al., 2019).

3. The presence on social media constitutes another key element of the 'Trotula' project. These platforms facilitate the sharing of educational content, community engagement and the creation of an ongoing dialogue with students and families.

4. A further media expression used is theatre, in different forms such as musicals and figure theatre. Theatre allows students to directly experience the content of fables, facilitating learning through action and emotion (Rivoltella, 2021).

5. The project also includes classroom activities and workshops to foster collaborative learning, as well as activities related to outdoor education that extend learning beyond the school walls, offering hands-on and sensory experiences that reinforce concepts learned in the classroom (Waite, 2011).

6. The design of public spaces such as playgrounds and kindergartens is a further component of the project. Environments were created that support inclusive play and learning, in line with Loris Malaguzzi's (2010) vision of space as the third educator.

7. Moreover, digital innovations find their expression through the design of a digital tutor the 'TroTutor', capable of making learning more interactive and personalised. New technologies offer interactive, personalised and immersive learning experiences, radically transforming the world of education and making it more engaging and effective (Prensky, 2001).

8. The latest 'experimentation' of the Trotula constellation concerns gaming, specifically the creation of a video game whose evocative name is Game of Trot.

The American psychiatrist Stuart Brown has made 'play' his primary field of research by founding the National Institute for Play (1990), with which he pursues the idea that through play, children (and adults) can acquire crucial social, emotional and cognitive skills, which are the main objectives of the Trotula project. Scientific literature in the pedagogical field has always questioned the educational value of play in all its forms, from street games to more contemporary ones, for its ability to make the student an active part of the learning experience. As an educational tool, play also requires an inclusive approach that takes into account the different abilities and intelligences of the players, applying differentiated practices capable of stimulating everyone's involvement (Gardner, 1999). Can therefore our heroine, Trotula de Ruggiero straight from the Middle Ages, lead children to the conquest of a better world and a future not immediately but acted upon?

3. The design

The design of the video game's architecture moves from the suggestions that emerge from the publications in which Trotula is the protagonist. The settings, characters and challenges proposed are linked to the book 'Trotula and the Enchanted Garden'. The game proposes a dynamic of opposition between obscurantism, represented by witches and sorcerers, and knowledge, embodied by the witch doctors and fairies. This dualism animates the conflict between evil and learning, individualism and collaboration, destruction and cure, offering an educational experience that explores the contrasts between opposing forces and promotes understanding of values such as cooperation, knowledge and cure through overcoming challenges. 'Game of Trot' is an educational video game that is developed through three main settings, each offering unique game experiences and specific missions. Each mission is designed to develop different skills. These settings are designed to immerse players in a medieval world rich in history and knowledge. The intention is to create a unique medieval setting where the darkness of cultural inhibition does not prevail, but the brightness of knowledge does, and distances itself from classical depictions characterised by dark tones, Gothic architecture, dragons and knights.

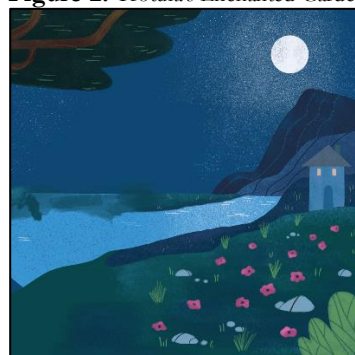
Figure 1. Game of Trot



Setting and Mission

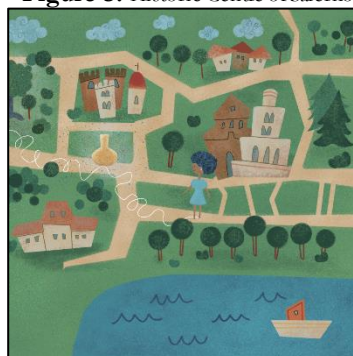
1. Trotula's Enchanted Garden (CARE): A lush and fascinating place, rich in medicinal plants from all over the world. This magical garden is cared for by Trotula herself. Players explore the enchanted garden, collecting medicinal plants and interacting with fairies and medicine women to prepare healing potions. Resource and time management is crucial to cure the inhabitants afflicted by mysterious ills. This quest emphasises the skills of gathering, resource management and healing.

Figure 2. Trotula's Enchanted Garden



2. Historic Centre of Salerno (COMBAT): A maze of streets in the heart of the city of Salerno, full of mysteries and secrets. This environment is full of dangers and challenges. Players face duels and dangerous enemies in the maze of the city, aiming to recover ancient artefacts and protect medical knowledge. They use combat skills and strategies to overcome obstacles and defeat enemies. This mission tests combat skills, courage and problem-solving.

Figure 3. Historic Centre of Salerno



3. Scuola Medica Salernitana (KNOWLEDGE): The centre of medical knowledge in the Middle Ages, where lectures and scientific workshops were held. Players participate in classes, solve puzzles and conduct research to unravel ancient secrets. Artificial intelligence is used to generate new quizzes and puzzles, keeping the experience fresh and challenging. This mission is focused on intellectual growth and solving complex problems.

Figure 4. Scuola Medica Salernitana



Characters and Roles

1. Trotula (KNOWLEDGE): The main protagonist and guide, she represents medical wisdom and knowledge. Players learn the basics of medieval medicine from her.
2. Minerva (CURIOSITY): Trotula's daughter is a character who embodies curiosity and exploration. She stimulates players to discover new secrets and ask questions.
3. Ory (GENEROSITY): She represents generosity and altruism, helping players understand the importance of taking care of themselves and others.
4. Fusandola (PROTECTION): Symbolises protection and safety, guiding players in combat and defence missions.

5. Matthew (CARE): A character dedicated to the care and well-being of the garden and all medicinal plants, he helps players in missions to collect and prepare healing remedies.
6. Alfano(WISDOM): A sage who offers valuable tips and guides players through intellectual and knowledge challenges.
7. Seagull(ADVICE): A character who provides useful advice and strategies for overcoming the difficulties of the game.
8. Medichesse(SCIENCE): A group of female medical experts who share their scientific knowledge with the players.
9. Witches and Sorcerers (MALEFICIO): Antagonists who use dark magic to hinder the players, adding elements of challenge and conflict.
10. River Fairies (MAGIC): Magical creatures who help players with spells, making it easier for them to complete quests.

4. Discussion

The video game "Game of Trot" is based on key concepts of the educational properties of digital games, which act as facilitators of indirect learning (Bateson, Martin, 2013). Experiential activity, which is generally guaranteed by games and specifically by our video game, ensures more effective learning through direct experience and active interaction. In "Game of Trot," players not only receive information and knowledge but actively engage in gathering medicinal plants, solving puzzles, and preserving medical knowledge. This experiential approach allows players to assimilate knowledge in a deeper and more lasting manner.

The decision to create three different settings, with three distinct missions and customisable difficulty levels, ensured by the application of artificial intelligence, allows for adaptation to various learning styles. The multiple modes of interaction and customisable difficulty levels enable each player to progress at their own pace, making learning more inclusive and effective. Scientific literature highlights how video games can develop cognitive and socio-emotional skills. "Game of Trot" integrates these aspects through missions that require self-regulation, decision-making, problem-solving, and of course creativity. Additionally, game characters such as Trotula and Minerva represent values like curiosity, generosity, and wisdom, promoting the development of emotional and social skills in players. The compelling narratives, evocative historical settings, and progressive challenges maintain high student motivation and engagement, thus facilitating deeper learning.

"Firstly, it is necessary to refer to the motivational sphere (both inherent to the video game itself and as an inspiration for educational situations that could embrace the spirit of the video game). There is no doubt that elements such as dynamism, rapid feedback, and non-punitive competitiveness give video games enormous appeal to the youth. " (Tanoni 2003, p.8).

Furthermore, the motivation is usually neglected in the design of educational video games, resulting in a loss of appeal after the initial gameplay experiences. Malone and Lepper (1987) focused their research on "Making Learning Fun," creating a taxonomy of motivation divided into individual motivations (challenge, curiosity, control, fantasy) and interpersonal motivations (competition, cooperation, intrinsic reinforcement). Therefore, motivation appears to be a fundamental factor for student engagement in the activity, driving them to find the source of knowledge and fulfilment in the activity itself. As Di Tore (2016) notes, studies have shown that some commercial video games, although not designed for educational purposes, can enhance decoding reading skills through their interactive elements. These games, selected for their engaging interactions, can be more effective in education than those explicitly created for learning, thanks to their broader appeal and immersive experience. The goal is to create a versatile and polysemic game (Tanoni, 2003) through which users can experience a wide range of emotions, acquire knowledge, and test their skills. Finally, the choice to create three interfaces, three settings, and three missions aligns with Antinucci's reflections that three classes of video games correspond to the three cognitive stages of Piaget's developmental

psychology: sensorimotor (dexterity and skill games), logical-operational (simulation games), and representational-symbolic (adventure games).

5. Conclusions

In the novel *Tomorrow, Tomorrow and Tomorrow* (Zevin, 2022), the protagonists are two designers and video game enthusiasts. At one point in the narrative, Sam, one of the protagonists, asserts that the labyrinth is "a video game distilled into its purest form." We might add that the labyrinth is perhaps the most fascinating and mysterious representation of space, taking on a central role in the video game. Thus, the video game is no longer merely a tool for learning but becomes the very place of learning, providing an immersive aspect to knowledge. The novel also states that designing a game involves imagining the person who will play it, which is one of the fundamental principles of a designer's or architect's work. Renzo Piano speaks of how the architect is an explorer of possible worlds (Piano, 2000), including virtual ones. Therefore, architecture, the profession of the author, can also serve video game ventures, designing imaginary and virtual environments with the same responsibility and rigour applied to the design of physical spaces. The Vitruvian triad, which has always guided the act of designing by architects, can also be applied to the world of gaming. A video game requires *firmitas*, a solid, efficient, and durable structure; *utilitas*, an intuitive and accessible interface; and *venustas*, recognisable graphics and captivating settings (Vitruvius, 15 BC).

In conclusion, the "Trotula" project represents a transmedia educational initiative that integrates various forms of media to create an inclusive and immersive learning experience. The video game "Game of Trot" is part of this extensive project, which includes illustrated books, audiobooks, podcasts, theatre, and outdoor educational activities. The interdependence and synergistic use of these tools make learning more engaging and accessible. Henry Jenkins, in his work on convergent culture and transmediality, highlights how stories can expand across various media, enriching the educational experience (Jenkins, 2006). With Trotula, transmediality goes beyond crossmediality; it is not merely about disseminating the same content across different platforms but about creating a narrative ecosystem where each medium contributes uniquely and complementarily to understanding Trotula's lesson. A story is never just a story but a powerful educational and aggregative tool that can transform our understanding of the world and ourselves.

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