

Developing Mathematics Literacy with Young Prisoners Through Nomadic Thought and Pinar ideas of curere

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In collaborazione
con:



Personal introduction/ journey:

- Conducting research in a Roma children classroom and in their community of origin (from 1999- 2000): an ethnographic research on the connection of cultural context and mathematics teaching/learning



- how cultural context shapes mathematical learning
- Systemic inequalities → Political dimension-Roma [children (mathematics) education a complicated issue]
- Consequences of marginalization

- “my father is in prison for black thing”
- “my father is in prison for white thing, he was a good person in the past since he used black thing but later, he became bad starting to use white thing,

[my first contact with prison]

Personal introduction/ journey:

- 2015 a social worker from prison asked help
- a conference on prison and prison education issues inspired us to involve in prison education
- starting with the CoSplRom (Common Spaces for Integration of Roma) experience. We considered the creation of a common space, space of equal participation as a tool for empowerment of youth in prison, of preparing prospective teachers to deal with diversity in real contexts.
- The common spaces:
 - Young Roma - police officers
 - Young Roma - media people
 - **Young (Roma) in prison - police officers and prison officers**
 - Roma and non-Roma parents- Roma and non-Roma children
 - **Prospective teachers – young (Roma) in prison**

Reflecting on the CoSplRom experience-

- Develop more caring relationships
- Listen more to their desires, expectations
- To build together curricular experience in reflective way, exploiting as much as possible learning opportunities



• **ACTinPRISON**
(Interaction Matters:
Research on
Development of
Alternative Curricular
Experiences for Young
Prisoners and
Prospective Teachers)

Conceptual Foundations

- **Nomadic Thought** (Deleuze & Guattari, 1987)
 - Main principles: fluidity, deterritorialisation, moving beyond fixed structures, challenging of hierarchies.
 - How it is applied in education context: embracing multiplicity, flexibility, and learning by understanding.
- **Curriculum as Currere** (Pinar)
 - Pinar reframes curriculum not as a static plan or set of objectives, but as a *lived, autobiographical, and experiential process*.
 - Emphasis on the **subjective and temporal dimensions** of learning (past, present, future as lived experience).
 - Compatible with **nomadic thought and corresponding pedagogy**: curriculum becomes a journey of becoming, contextual, contingent, and deeply personal.

- **Phases (Pinar):**

- **Regressive**
- **Progressive,**
- **Analytical**
- **Synthetical Phase**

Conceptual Foundations

- **Common spaces instead of public space**
 - Common spaces are not pre-given or universally regulated; rather, they are locally constructed through social practices of participation, negotiation, and mutual recognition (Cianciotto, 2020; Harvey, 2013; Stavrides, 2016).
 - While public spaces may appear open, their openness is contingent on conformity. Common spaces, however, are always in the making—formed through the actions of “commoners” engaged in commoning, a process of shared world-building.
 - Common spaces as pedagogical practices where teacher and learner roles blur, echoing Pinar’s call for curriculum as shared and subjective experience.
- **Funds of Identity**
 - The concept of funds of identity builds on funds of knowledge by stressing how people use cultural, social, and material resources to construct and express their identities. Esteban-Guitart and Moll (2014) show that this perspective moves beyond recognizing prior knowledge to affirming learners’ sense of self and agency. In contexts like prisons, funds of identity highlight the transformative role of teaching in supporting identity development

Conceptual Foundations

- **Ethnomathematics, Culturally Responsive Teaching & Recognition**
- **Ethnomathematics and Culturally Responsive Teaching**
 - Mathematics as culturally embedded, not neutral (D'Ambrosio, 1985; Gay, 2010).
 - Builds on learners' cultural practices and experiences.
 - Validates diverse ways of knowing mathematics with obvious consequences on (mathematics) learning.
- **Recognition (Honneth, 1995)**
 - Recognition comes apriori, is not expected adaptation to the mainstream norms
 - Recognition fosters self-confidence, dignity, and social esteem.
 - Affirming cultural mathematical practices empowers marginalized learners as legitimate thinkers.

-

ACTinPRISON (Interaction Matters: Research on Development of Alternative Curricular Experiences for Young Prisoners and Prospective Teachers)

- **Main goal:**
 - improvement of the educational experience for young prisoners and the same time
- **Particular objectives**
 - Develop (mathematics, language etc) literacies by design and evaluate innovative curricular activities (using Drama and ICT) to foster dynamic, interactive learning.
 - Mitigate violence and promote peaceful coexistence among young prisoners from diverse backgrounds.
 - Empower prisoners for better (re)integration and prepare prospective teachers for their future roles through these collaborative actions.
 - Develop a theoretical framework for alternative education that enables transformation and sustainable social integration.

Methodology: conceptual framework

- **Ethical Stance:** The research consciously addresses potential dangers of power dynamics ("governmentality", Foucault, 1991) by prioritizing a humanizing approach. It focuses on participants' desires and expectations, avoiding exploitative focus on stories of humiliation (Tuck 2009, Tuck and Young, 2014) [decolonizing research].
- **Primary Methodology: Communicative Methodology (CCM)**
 - A dialogical approach emphasizing the direct, active participation of the researched subjects.
 - Challenges knowledge hierarchies, asserting that all participants can contribute to knowledge creation (influenced by **Habermas, 1984**).
 - Values participants' own interpretations and lived experiences (influenced by **Schütz & Luckmann**).
 - Aims for liberating practices and the transformation of oppressive conditions (influenced by **Freire**).
- **Complementary Approach: Youth Participatory Action Research (YPAR)**
 - A process focused on empowering youth participants.
 - Aims to create tangible improvements within their local communities.
- **Shared Goal:** Both CCM and YPAR are fundamentally advocacy-oriented, driving toward change and transformation.

Work Packages Overview

- WP1: Project Management
- WP2: Current Theory, Practices & Needs Analysis
- **WP3: High Quality Training of Prospective Teachers**
- **WP4: Curricular Activities Inside Prison**
- WP5: Quality, Assurance, & Evaluation
- WP6: Educational Policy/ies: Recommendations
- WP7: Dissemination

WP3: High Quality Training of Prospective Teachers

- This phase involved designing, developing, and implementing a specialized training program for prospective teachers on prison education.
- The process was informed by initial focus groups and concludes with reflective focus groups to evaluate the training's outcomes.

Preparing prospective teachers: focus groups

Thematic analysis (Roula Kitsiou)

- TC1 Students' Attitudes towards the concept of delinquency
- TC2 Preconceptions of prison as an institution and imprisonment as a process
- TC3 School as part of prison life - Representations of schooling in the prison context
- TC4 Implications of imprisonment – Rehabilitation challenges

Preparing prospective teachers: training

- The institution of prison (Leonidas Kotoulas)
- Educational Policy in Prison Education & School in Prisons (Yiannis Fovos)
- Intercultural Communication (Christos Govaris)
- From Formal Pedagogy to Adult Education: Theories and Practices (Kostas Magos)
- Curriculum studies (Peter Appelbaum)
- Linguistic Literacy (Roula Kitsiou & Sotiria Kalpeni)
- Mathematical & Technological Literacy (Charoula Stathopoulou, Vasiliki Chrysikou & Vangelis Katsigiannakis)
- Art in Prisons (Maria Karazanou)

[in red the team that acts in prison]



WP4: Curricular Activities Inside Prison

- It focused on creating a "common space" for :
 - prisoners and
 - teachers to
- co-develop educational content.
- It involved the
 - development,
 - implementation, and
 - evaluation of
- curricular activities through a series of workshops and the creation of an e-learning platform.

Preparation of young prisoners: need analysis

Thematic analysis (Maria Karazanou)

- Familiarity, trust, team/communication/ adjustment?/Prison and socialisation
- Conceptions about research/I don't want someone else to tell my story
- Intercultural communication. Lack of common codes/ Attitudes towards the other
- Thoughts on education
- Identity and performance
- Agency/ time /Autonomy

Preparation of young prisoners: becoming co- researchers



What is a research?



Sharing examples of
research



Conducting short
researchs all together

The regressive dimension

In the Regression phase of currere , participants revisit and reflect on key educational experiences – painful memories, exclusions and early failures – that continue to shape their identity. During the group workshops we observed that:

- A young man from Syria describes a life marked by loss and abandonment, explaining that his only “education” came from the streets, with formal schooling only beginning in prison.
- A young Pomak man recalls years of watching classes from the window of a school, which he was denied entry due to lack of documentation.
- A young man of Turkish origin describes how, after being violently denied entry to school, he reacted with anger and despair.

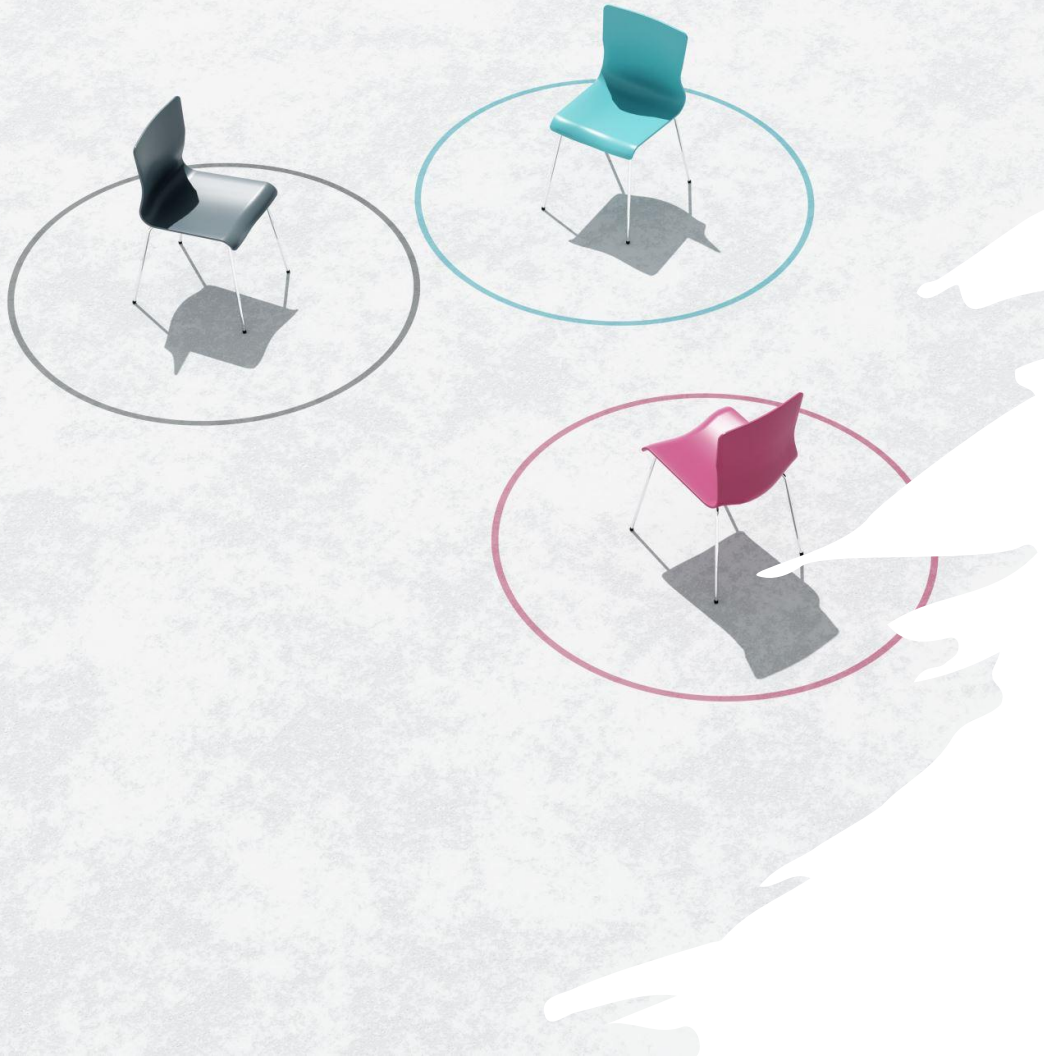
These narratives where young prisoners shared deeply personal stories, in the communal spaces, serve as data in Pinar's sense - raw, autobiographical fragments that remain in the present, shaping how these individuals see themselves as students, outsiders, and potential students.

The progressive dimension

- The Progressive Phase of Currere challenged participants to actively envision alternative futures, moving beyond passive hope to redefine themselves.
- This phase disrupted the concept of frozen time (Moran, 2012) associated with incarceration, projecting them into narratives of action, creativity, and collective transformation. **The *progressive dimension***

In action

- Next, some examples of acting in common spaces in the spirit of nomadic thought and Pinar's notion of curere



1. From Geo-metry to crafting a pyramid

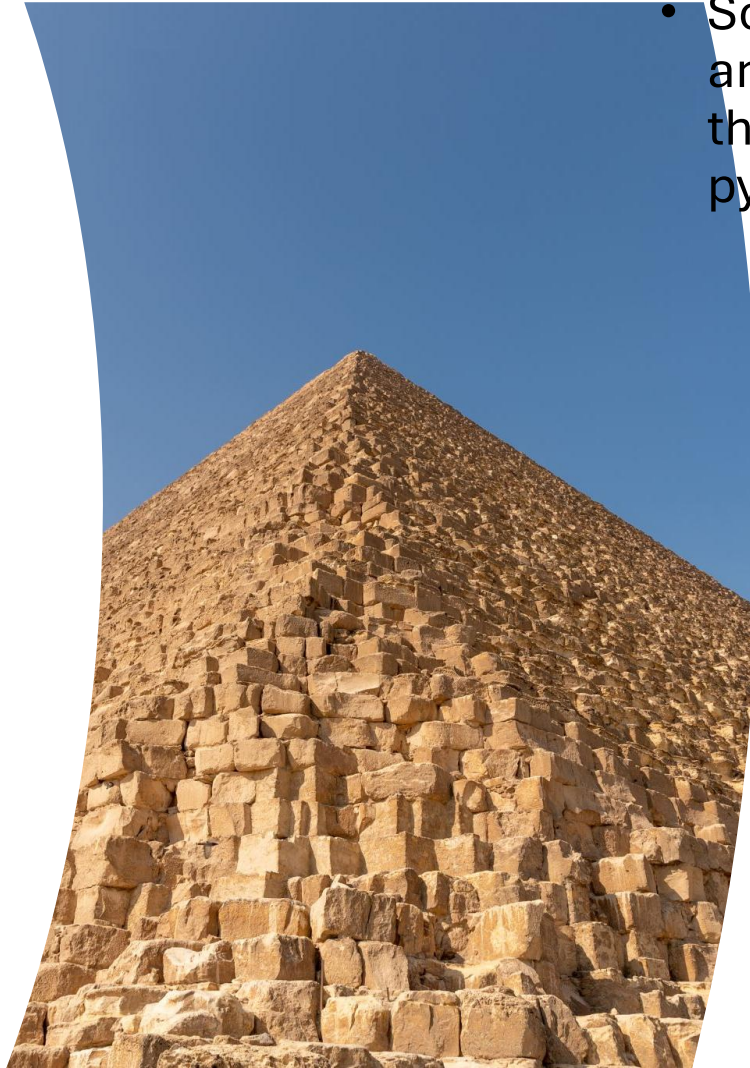
Meaning of Geometry- etymology

Geo-metry

Reference to ancient Egypt

Question about what they know about it

Someone spoke about pyramid



- Following non-linear path for developing common curricular experience we used to build on the ideas and questions that had arisen – often spontaneously—in each previous visit.
- So after the discussion of the term Geo-metry and the reference to Ancient Egypt and pyramids the whole team decided the construction of a pyramid
 - We provided
 - hard paper
 - Geometrical tools
 - Together we decided
 - The kind of pyramid
 - Discussion of how to make the basis of pyramid
 - Discussion of how to construct the sides
 - They realized that we need 4 equal isosceles triangles

Sharing the experience of constructing a pyramid



Sharing the experience of constructing a pyramid



Sharing the experience of constructing a pyramid





Reflection

- **Participants shared their diverse skillsets:** They combined theoretical knowledge in mathematics and geometry with practical, hands-on construction skills.
- **Collaborated on every step:** They worked together to measure, cut, join, glue, assemble, decorate, and ultimately build an object.
- **A translingual, hands-on process:** As shown in Images before hands worked together across languages to collectively measure and design the side of a pyramid.

2. constructing a kite

- After having established relations of trust and cooperation with the prison staff and through the social worker's mediation, we were allowed to realize an open-air class outside the primary school classroom, something very rare for carceral contexts.



Constructing a kite

- After having established relations of trust and cooperation with the prison staff and through the social worker's mediation, we were allowed to realize an open-air class outside the primary school classroom, something very rare for carceral contexts.
- First on a cycle, each one shared experience of crafting and flying a kite



Reflection on the experience

- **A Mathematical Process:** Building the kite required applying geometry and physics to transform a 2D design into a functional 3D object.
- **Empowerment Through Creation:** For the incarcerated youth, this process provided a crucial sense of agency and accomplishment in a restrictive environment.
- **Cognitive Engagement:** It offered a positive, practical challenge that countered mental stagnation and fostered problem-solving skills.
- **Resilience and Hope:** Success was a tangible victory, while failures taught resilience. Math became a practical tool for hope, allowing them to symbolically and literally reach beyond their confines.

*“This will become a memory
Today I forgot that I’m in prison*

inventing machines, useful for the people

- **Collaborative Invention:** Participants worked together to create imaginative devices that blended their personal experiences with new concepts.
- **Critical Examination:** Through discussion, they questioned the nature of science and innovation, asking "Who can be a scientist?" to decolonize knowledge.
- **Liberatory Inventions:** They built original tools (e.g., symbolic time machines, special sunglasses) to reclaim agency and see beyond their physical confines.
- **Epistemological Uprising:** This process was a form of collaborative resistance, using creativity to challenge the prison's mental and physical boundaries.



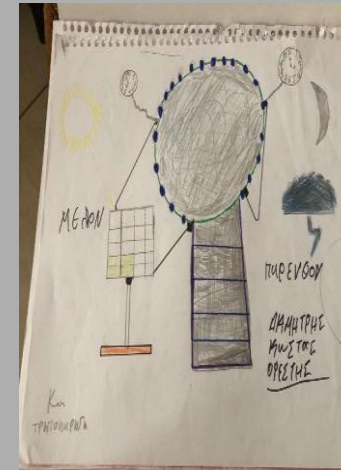
Drawing a Time-Machine for Redesigning the Past

Interdisciplinary Design: Youth merged math and language to collaboratively design a symbolic, solar-powered time-machine.

Liberatory Symbolism: The invention used imagery (a stormy past vs. a sun-lit future) to represent a transformative reckoning with time and an empowered future.

Mathematics as Imagination: Precise geometrical shapes made math a tangible and creative practice.

Identity Text: The device functioned as a tool for reflection and expression, using literacy to redefine relationships with time, error, and possibility for hopeful reinvention.

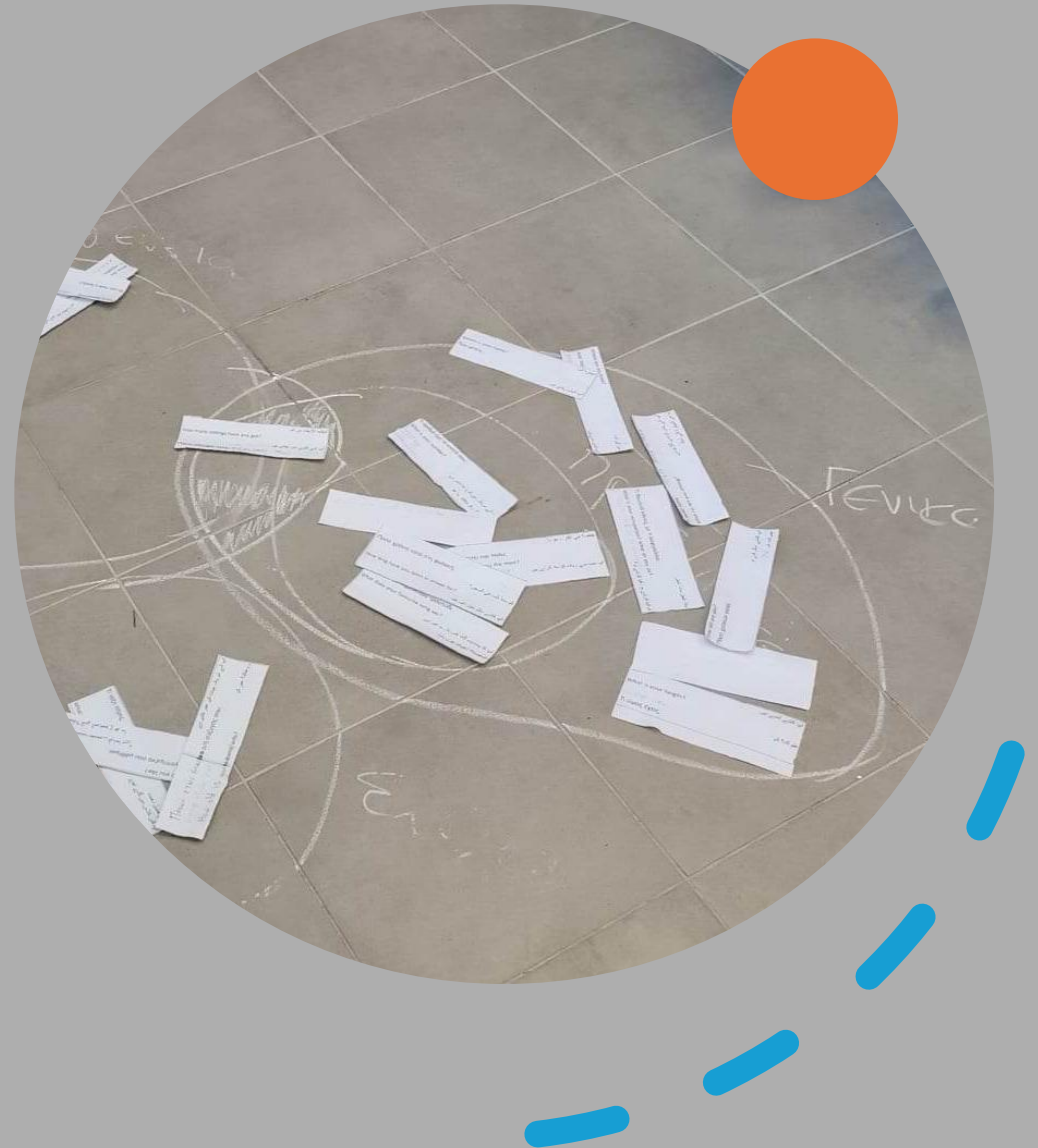


*With this machine I could go back and
to repair my mistakes*

Imagining and
designing a time-
machine that erases
mistakes

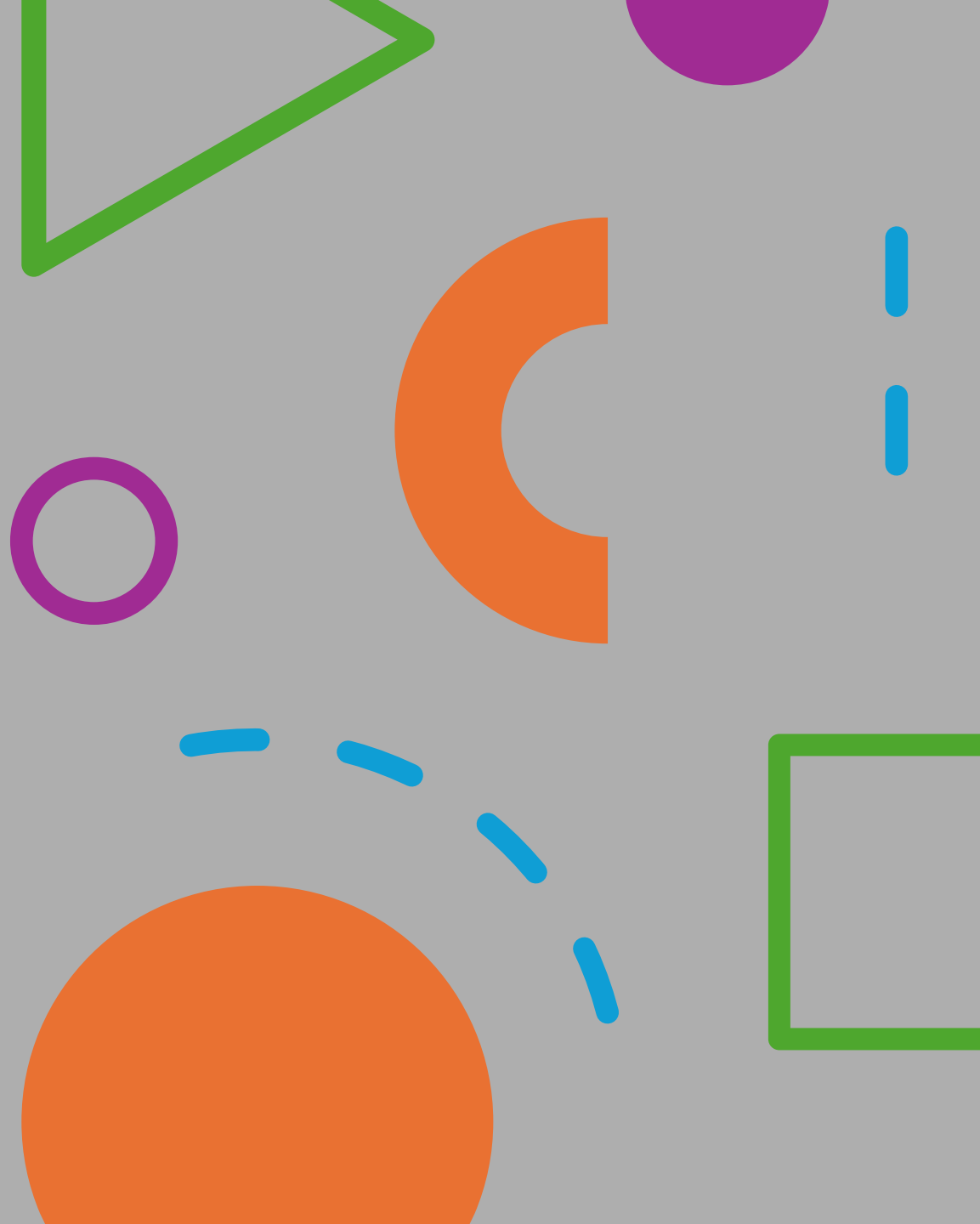
The Analytical Dimension: Deconstructing Current Pedagogical Space

- **Multilingual Approach:** The workshop used Greek, Arabic, Turkish, and Romani dialogue to explore mathematical set theory, allowing concepts like unions and intersections to emerge naturally.
- **Translanguaging:** Participants co-constructed meaning without technical terms, using shared context and gesture to deepen understanding.
- **Challenging Hegemony:** This method made math accessible and centered marginalized knowledge, challenging traditional, exclusionary STEM structures.
- **Liberatory Space:** It created an embodied, dialogic learning environment that decentered academic discourse and built a foundation for a liberatory curriculum- a liberatory, rhizomatic curriculum



Discussion- Conclusion

- **Transformed the Space:** It turned a controlled carceral classroom into a dynamic, participatory learning environment.
- **Merged Literacies:** Through creative acts (kites, time-machines, pyramid), participants merged critical literacy and math to process trauma, reclaim agency, and envision new futures.
- **Empowering Pedagogy:** Using translanguaging and dialogue, it disrupted institutional logic and replaced disciplined hope with educated hope.
- **Fugitive Pedagogy:** This approach served as an act of resistance, using imagination to prefigure liberation and solidarity.

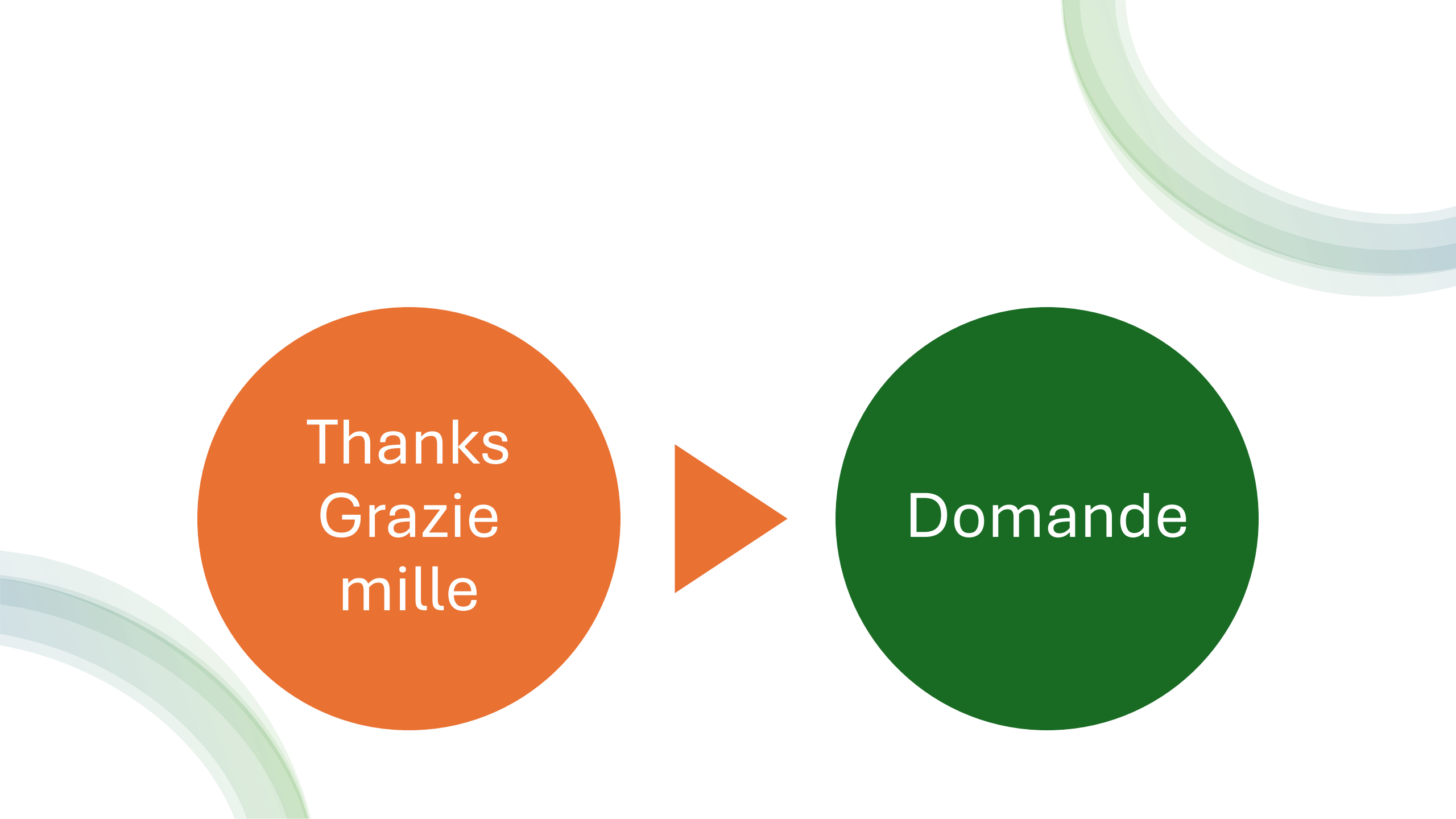


Final reflections

- **Reconceives Prison Education:** Argues that carceral environments can be transformed by pedagogies centered on lived experience and collaborative learning.
- **Centers Student Agency:** Through dialogic approaches, incarcerated youth reclaimed their voices, languages, and capacity to imagine futures.
- **Shifts Education's Purpose:** Turns education from a tool of control into a means of restoring humanity and agency.
- **Challenges Carceral Logic:** Opposes the surveillance, standardization, and epistemic exclusion prevalent in both prisons and broader education systems.
- **A Model for Justice:** Reimagines education as a space for cultural recognition, emancipatory learning, and collective resistance.

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Thanks
Grazie
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Domande