International Conference
The Future of Education

Bridging Theory and Practice: Cognitive Dissonance as a Pedagogical Tool for Cultivating Inclusive Educators

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Bridging Theory and Practice: Cognitive Dissonance in Teacher Education

- Transforming teacher education
- Preparing educators to address complexities in multicultural classrooms

- Managing cognitive dissonance—psychological discomfort arising from confronting conflicting beliefs—within virtual simulations can serve as a powerful pedagogical tool.
- Using the "School of Valtance" simulation platform

Research Question & Objectives

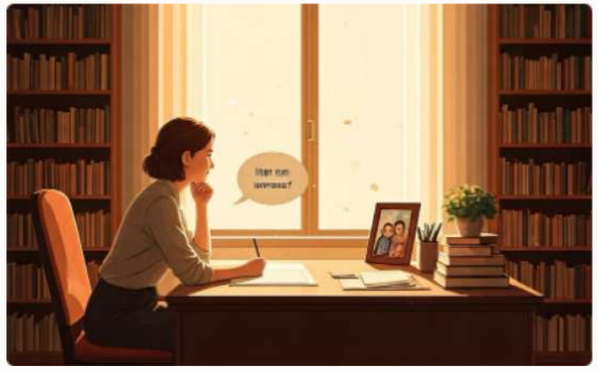
This research explores how integrating **cognitive dissonance** within the 'School of Valtance' simulation improves pre-service teachers' equity, inclusion, and intercultural communication competencies for diverse classrooms.

Cultivate Critical Consciousness & Equity

Examine how dissonance scenarios foster critical consciousness, adaptive expertise, and commitment to equity.

Assess Implicit Biases & Structural Barriers

Assess simulation impact on awareness of implicit biases and systemic barriers affecting marginalised students.



Foster Metacognitive Development

Evaluate structured reflection in fostering metacognitive development, critical self-reflection, and challenging beliefs.

Strengthen Educational Dilemma Skills

Analyse how engaging with complex dilemmas strengthens practical skills in differentiation, trauma-informed instruction, and culturally responsive pedagogy.

Introduce Reflection-Action Cycle Model

Introduce and validate the "Reflection-Action Cycle" model, mapping how simulated dissonance translates into shifts in pedagogy and equity praxis.

Contribute Empirical Evidence on Scalability

Contribute robust empirical evidence on the scalability and long-term impact of dissonance-driven simulation strategies in teacher preparation.

Research Methodology and Participants

1

Sequential Explanatory Mixed-Methods Design

Combined quantitative data from validated Likert-scale questionnaires with qualitative insights from reflective reports, observations, and debriefing sessions

2

Diverse Participant Pool

79 pre-service teachers from nine faculties of education across Europe, North America, Africa, and South America

3

Ethical Considerations

All procedures conducted in accordance with BERA standards, with informed consent and strict confidentiality

The School of Valtance Simulation

Immersive Role-Playing

Pre-service teachers assumed roles of administrators, teachers, parents, and community members, each with distinct backgrounds and perspectives

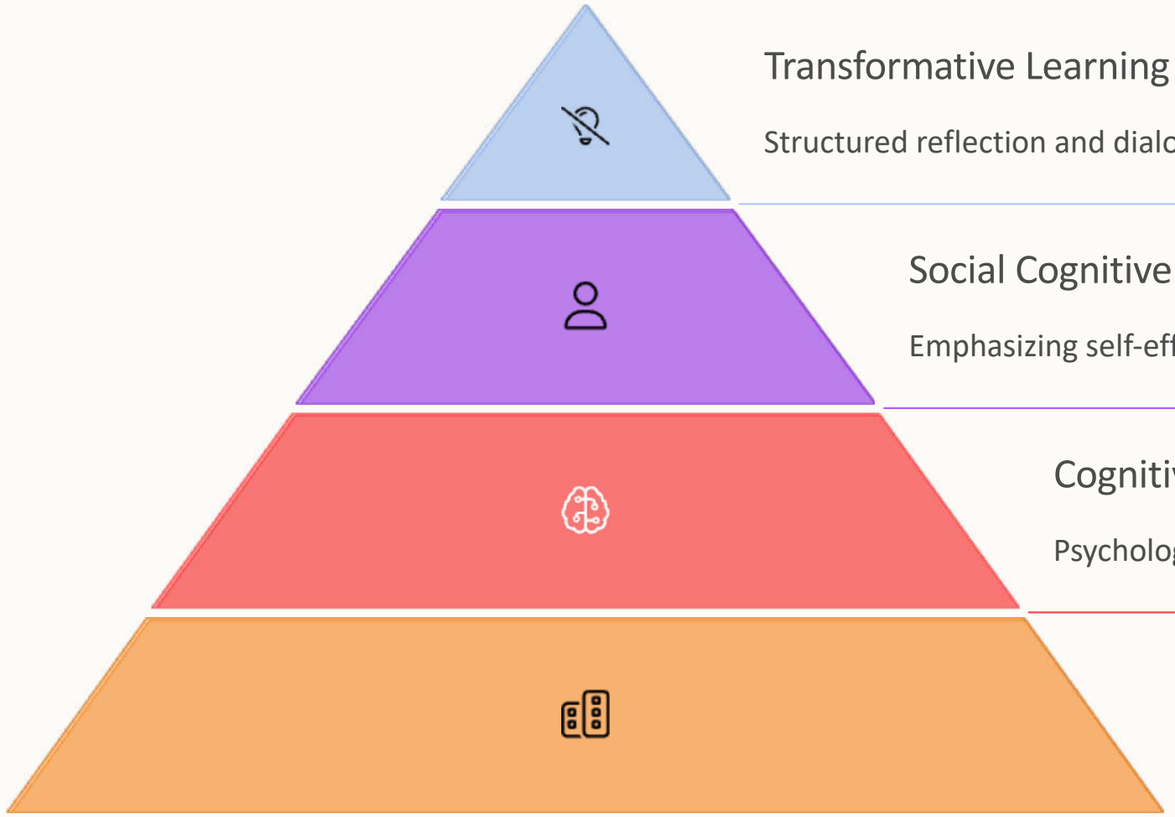
Real-World Dilemmas

Participants engaged with complex scenarios including resource allocation for special needs students, AI integration ethics, and institutional policies

Intentional Cognitive Dissonance

Scenarios presented conflicting viewpoints and competing interests, requiring debate, negotiation, and justification of decisions

Theoretical Framework



Transformative Learning

Structured reflection and dialogue supporting deep, actionable change

Social Cognitive Theory

Emphasizing self-efficacy and agency in teacher development

Cognitive Dissonance Theory

Psychological discomfort from conflicting beliefs driving learning

Constructivism

Active knowledge building through meaningful experiences

This integrative framework explains how simulation-based teacher training fosters metacognitive growth and advances equity and inclusion in education. The effectiveness of cognitive dissonance depends on its intensity: moderate levels encourage reflection without overwhelming learners.

Materials and Methods (1)

- **Participants:** total of 79 participants
- **2 groups:**

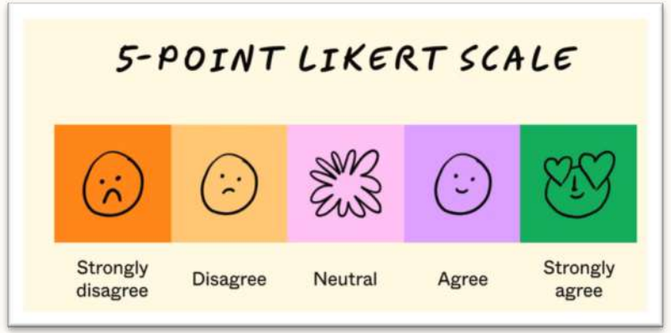
  a. **Observers**: academic professionals assessing.

  b. **Students**: future teachers doing the simulation.
- **Context:** "*School of Valtance*" Simulation.

Participants experienced realistic scenarios and challenging situations related to multicultural education

Materials and Methods (2)

- **Data Collection:** questionnaire for teachers' opinions.
  - 5-point Likert scale: ranging "Strongly Disagree" to "Strongly Agree"



- **Two main dimensions were measured quantitatively:**
  - Equity & Inclusion (fairness and equal opportunities)
  - Intercultural Communication (communicating respectfully across cultures)

- **Qualitative questions were also included:**
  - open-ended questions (experiences, feelings, and reflections, personal insights and the reasons behind their ratings)

Quantitative Findings

Normality Test (Kolmogorov-Smirnov Test):

- to check data normality

Results

- not normal data ($p < 0.001$).

Non-normal results led to non-parametric methods

Descriptive Statistics:

- Equity and Inclusion: Mean = 4.56, Median = 5
- Intercultural Communication: Mean = 4.58, Median = 5
- Low standard deviations (0.693 and 0.591) show very similar answers

Table 1. *Normality test* (Kolmogorov-Smirnov)

	W	p
Equity & Inclusiveness	0.652	< .001
Intercultural communication	0.652	< .001

Note. A low p-value suggests a violation of the assumption of normality

Table 2. *Descriptives*

	N	Mean	Median	SD	SE
Equity & Inclusiveness	79	4.56	5	0.693	0.0780
Intercultural communication	79	4.58	5	0.591	0.0665

Wilcoxon Signed-Rank Test

- Results compared with the neutral point (3) on the questionnaire
- Results were statistically significant:
- Equity & Inclusion
  (p < 0.001, large effect: 0.835)
- Intercultural Communication
  (p < 0.001, large effect: 0.941)

Table 3. *One Sample T-Test (Wilcoxon Test)*

					95% Confidence Interval			
		Statistic	p	Mean difference	Lower	Upper		Effect Size
Equity & Inclusiveness	Wilcoxon W	2900	< .001	1.50	1.50	2.00	Rank biserial correlation	0.835
Intercultural communication	Wilcoxon W	3066	< .001	1.50	1.50	2.00	Rank biserial correlation	0.941

Note. H_a μ ≠ 3

*The simulation had a strong positive impact on teachers' perceptions

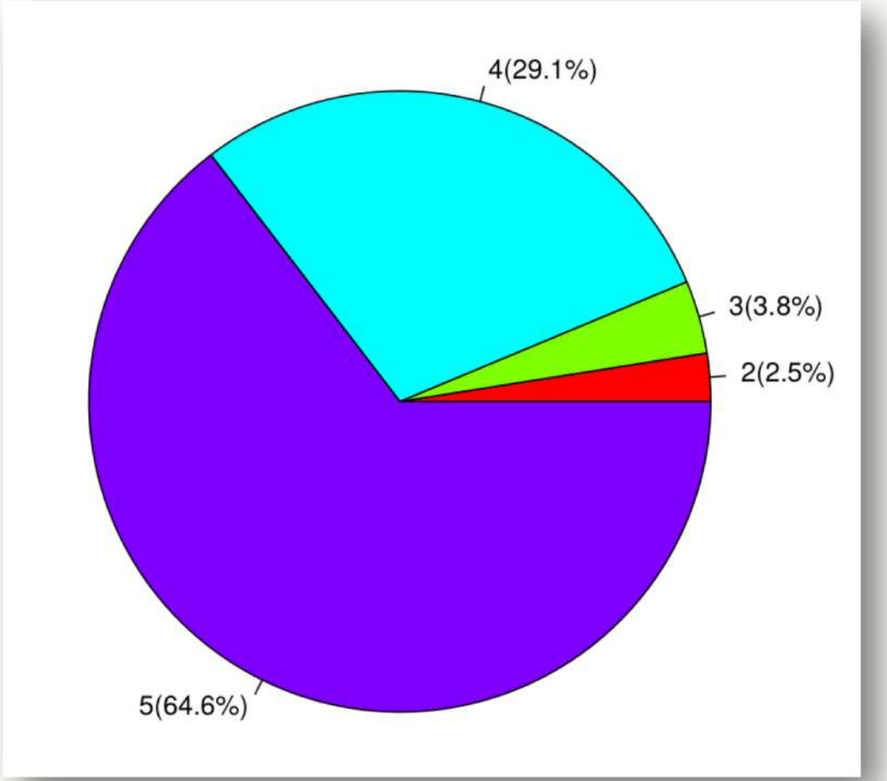
Results: Equity & Inclusiveness

***Equity & Inclusiveness*: Perception of Participants**

64.6% strongly agree (5)

29.1% agree (4)

Only 6.3% chose neutral or negative ratings (2-3).



*The distribution of responses was notably skewed toward the higher end, reflecting overwhelmingly positive perceptions of Equity & Inclusiveness within the Sim+VE project. Only 6.3% of responses fell within the lower categories (2 or 3), suggesting minimal neutral or negative perceptions

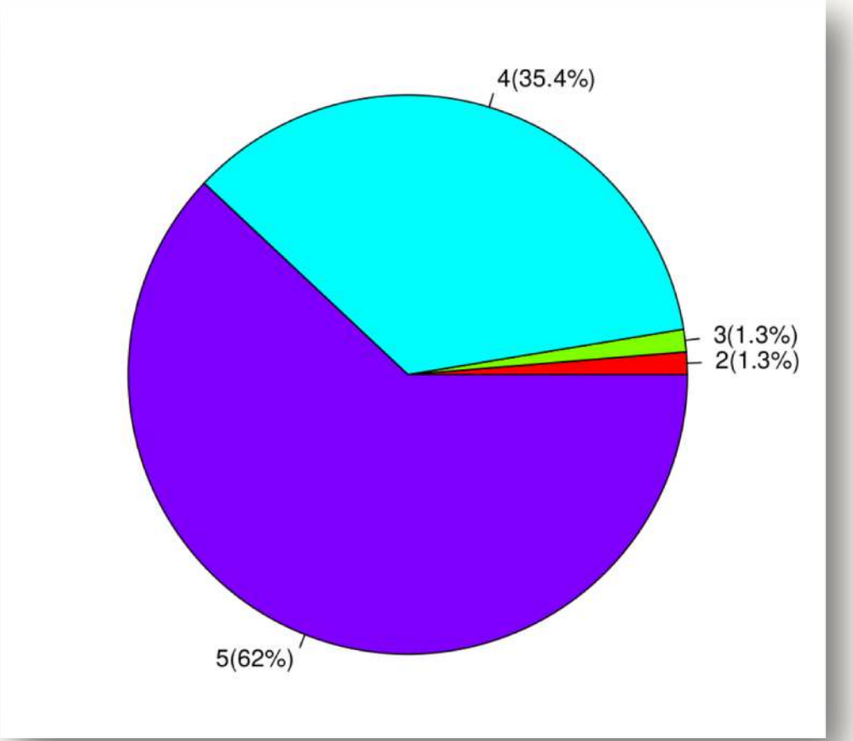
Results: Intercultural Communication

***Intercultural Communication*: Perception of Participants**

62% strongly agree (5)

35.4% agree (4)

Only 2.6% chose neutral or negative ratings (2-3).



*Participants found the Sim+VE project very effective in improving intercultural communication skills, essential for managing diverse classrooms.

Software Used

- Jamovi: for statistical tests and descriptive statistics

- R software: for creating additional clear and professional graphs

Qualitative Insights

Increased Awareness

Participants noticed their own hidden biases and the problems facing students from different backgrounds.

Hard scenarios made them face their limited views, making them more sensitive to issues of fairness.

Critical Self-Reflection

Different opinions made them think deeply and change their old ideas about fairness, variety, and what teachers should do.

Many said they went from just understanding ideas to actively working for fairness.

Adaptive Expertise

Working through complex scenarios again and again helped them feel confident in using flexible teaching methods and culturally aware lessons.

They improved their skills through many rounds of talks, solving problems, and working together to make choices.

The Reflection-Action Cycle Model

Encounter Dissonance

Participants experience conflicting perspectives in simulation

Critical Reflection

Engage in guided reflection and dialogue

Apply Insights

Transfer learning to actual teaching practice

Revise Assumptions

Develop new strategies and perspectives

A key conceptual contribution of the study, this model maps how simulated experiences of cognitive dissonance translate into real-world equity praxis. It emphasises that meaningful change results from ongoing, supported engagement with challenging ideas and situations, not from a single experience.

Maximising Benefits of Cognitive Dissonance

Calibrated Discomfort

Scenarios should induce moderate, manageable discomfort—enough to prompt reflection but not cause defensiveness

Psychological Safety

Creating supportive environments where participants feel secure exploring challenging perspectives

Structured Debriefing

Facilitators must provide guided opportunities for reflection and peer discussion to process experiences

Authentic Scenarios

Dilemmas must reflect real-world challenges to deepen engagement and enhance transfer of learning

Limitations and Future Research

Longitudinal Studies

Track participants into teaching careers to assess sustained impact

Optimal Calibration

Explore ideal dissonance levels for diverse learner profiles

Expanded Populations

Include in-service teachers and administrators

Conclusions and Implications

Theory-Practice Bridge

Simulation-based learning bridges the gap between theoretical knowledge and practical application

Equity-Oriented Educators

Structured cognitive dissonance cultivates inclusive, critically conscious teachers

Scalable Strategy

Offers adaptable approach for diverse educational contexts

Thanks for Your Attention

We appreciate you joining us today.

Questions & Answers

We welcome your questions and feedback.