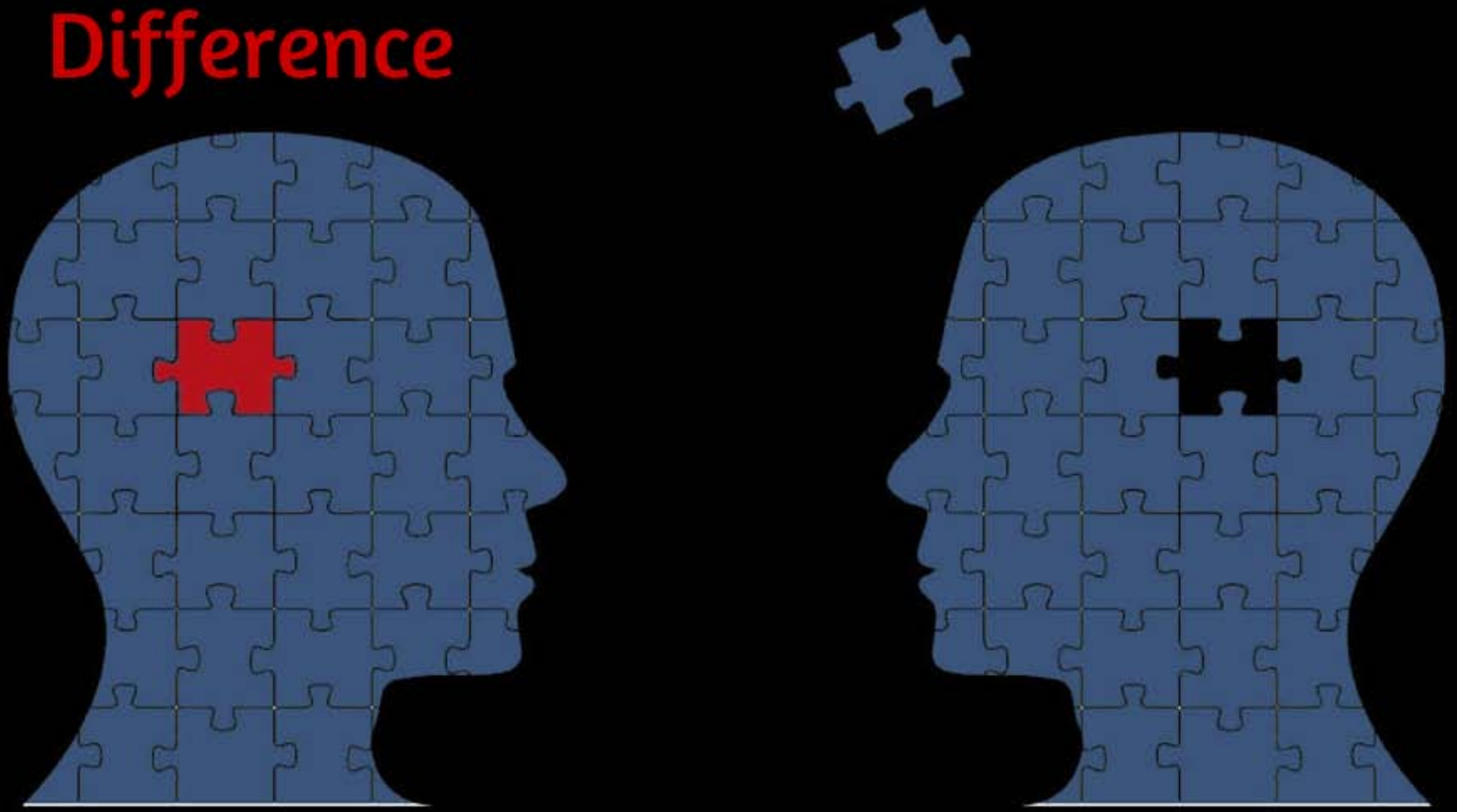
Math Learning Disabilities

Difference



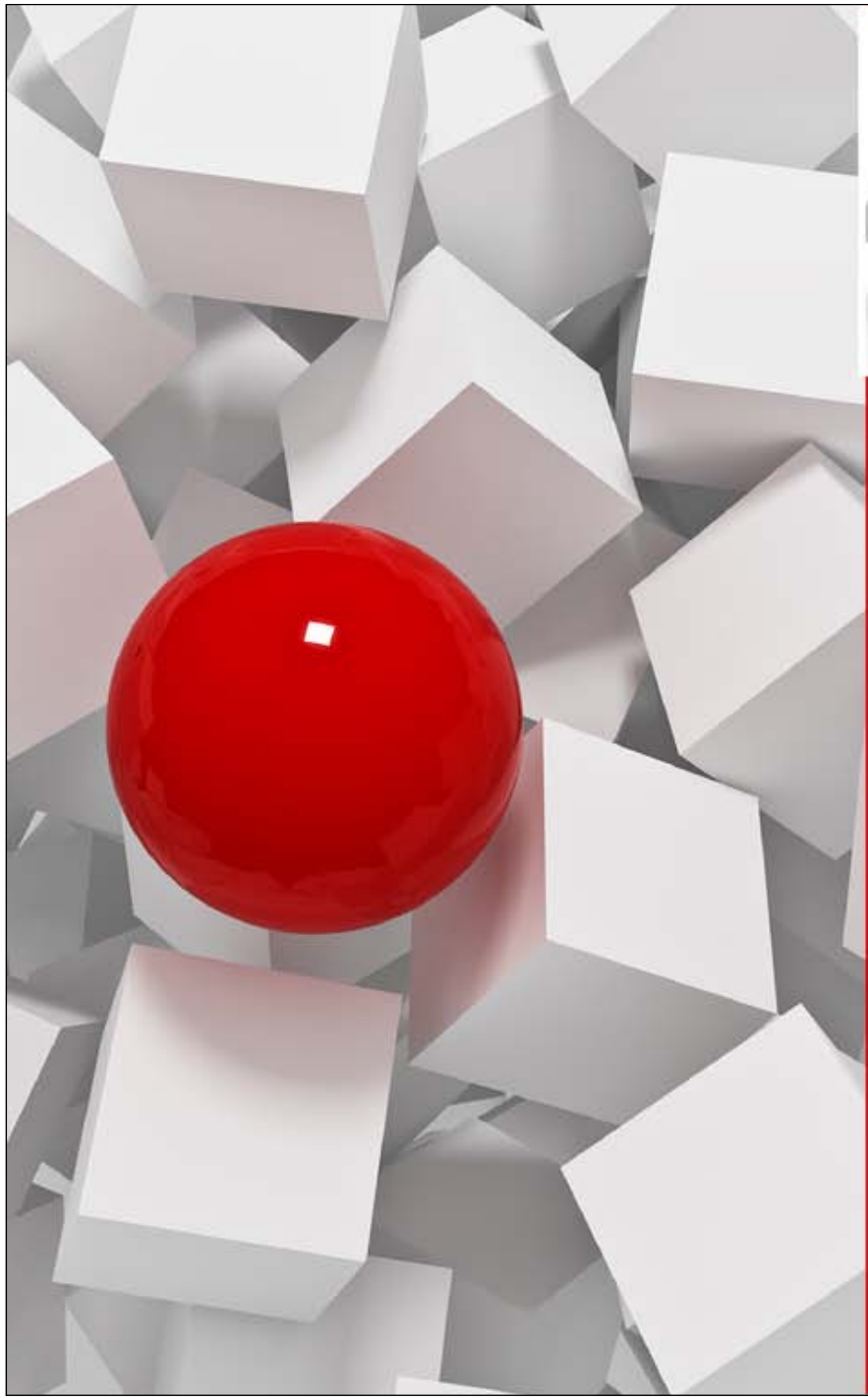
not Deficit

Careful Identification of Students with Math Learning Disabilities

2 out of 11 students met criteria

- [x] Unexplained low math achievement
- [x] Lack of Response to Instruction (RTI)

Analysis of tutoring sessions revealed atypical understandings of fractions



Both students had ***similar*** atypical understandings of fractional quantity.

Halving Understanding

Typical

Draw $\frac{1}{2}$

shading highlights the **quantity**

Atypical

Draw $\frac{1}{2}$

Atypical: Focus on splitting

Contrast of typical and atypical fraction understanding

Fractional Complement Understanding

Typical

Draw $\frac{3}{4}$ →  = $\frac{3}{4}$ Interpreted as

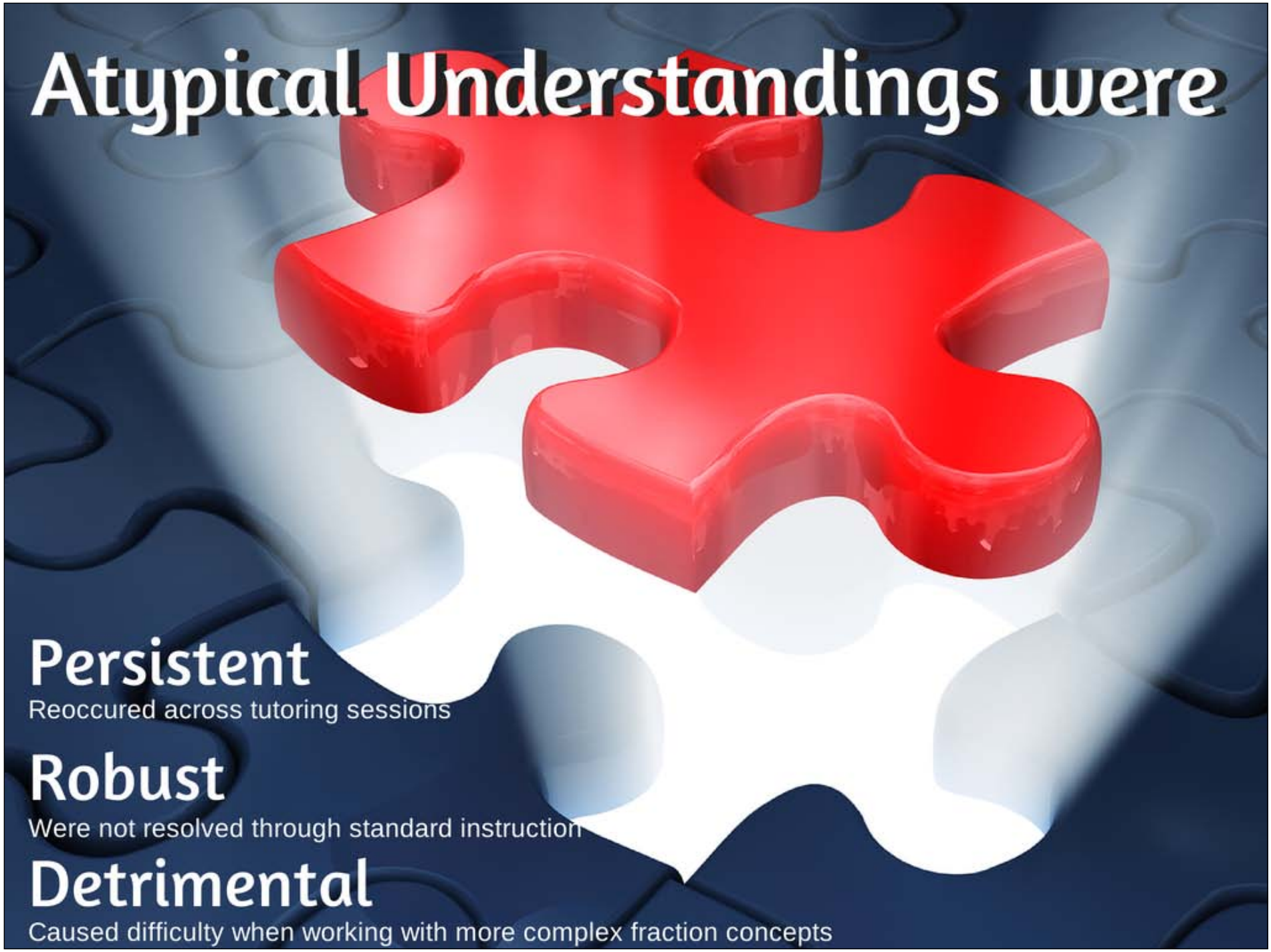
Focus on the fractional **quantity**

Atypical

Draw $\frac{3}{4}$ →  = $\frac{1}{4}$ Interpreted as

Atypical: Focus on the fractional complement

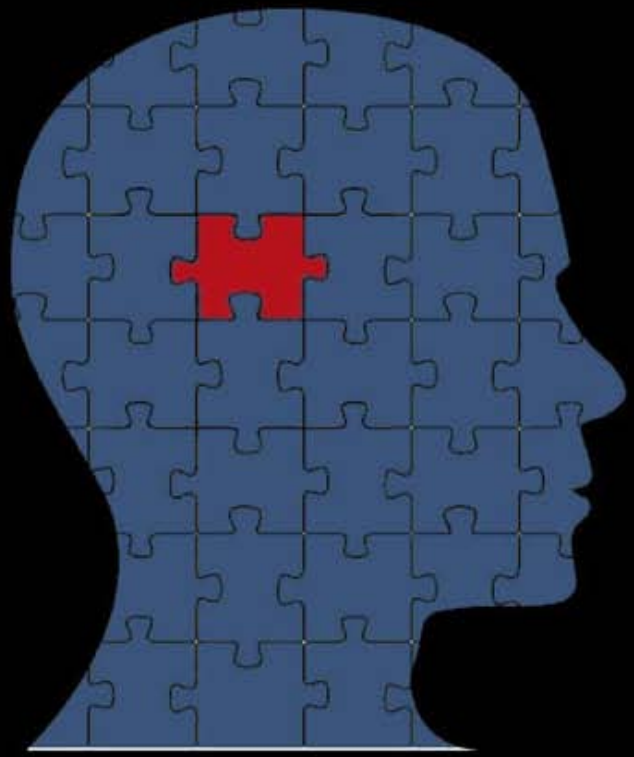
Contrast of typical and atypical fraction understanding


Atypical Understandings were
Persistent
Reoccured across tutoring sessions
Robust
Were not resolved through standard instruction
Detrimental
Caused difficulty when working with more complex fraction concepts

Representations of quantity were inaccessible to students with math learning disabilities.

Math Learning Disabilities

Difference → Inaccessibility



CITATION

Lewis, K. E. (2014). Difference Not Deficit: Reconceptualizing Mathematical Learning Disabilities. *Journal for Research in Mathematics Education, 45*(3), pp. 351-396. (http://www.nctm.org/publications/article.aspx?id=42001)