



FANTASY SPORTS MATH LEAGUE

Phase 2 Pilot | Research Summary | Fall 2025

n = 325 n = 252

game play pre-survey

n = 104

matched pre-post

+1.38***

Avg math problems correct
($p < .001$)

+0.50***

Fraction confidence ($p < .001$)

-0.29*

Fraction anxiety ($p = .044$)

100%

Teachers want to use FSML again

Study Design & Sample

Design: Pre-post quasi-experimental, no control group. 9 teachers, ~325 students, 6 states. Fall 2025 NFL season.

Pre-survey baseline: n = 252 students completed 11 math problems and a 15-item attitude scale before the program.

Matched pre-post sample: n = 104 students whose pre- and post-survey responses could be linked by ID.

In-platform temperature checks: Voluntary 3-item ratings (math confidence, fraction confidence, game excitement) at beginning, midway, and end of season. 9 of 13 classes completed all three time points.

Instruments: Math skill (11 fraction/order-of-operations problems); Attitude scale (15 items, 1–5 Likert); Paired t-tests for significance testing.

Math Skill Outcomes (matched n=104)

	Pre	Post	Gain
Total score (0–11)	6.30	7.67	+1.38***
% correct, P1	61.5%	78.8%	+17pp
% correct, P3	64.4%	82.7%	+18pp
% correct, P10*	17.3%	38.5%	+21pp

*Gains on the most difficult content signal genuine skill development.

9 of 11 problems improved. Score distribution shifted upward: students scoring 10–11/11 **doubled** (19→38); students scoring 0–3/11 **halved** (24→12).

Confidence & Anxiety (matched n=104)

Attitude Item	Pre	Post	Sig.
Fraction confidence	3.34	3.84	p < .001
Fraction anxiety*	2.54	2.25	p = .044
General math confidence	3.74	3.93	n.s.
Challenge enjoyment	3.28	2.96	p = .009

*Reverse item; lower = less anxiety (improvement).

Fraction confidence was the **lowest-rated item at baseline** and produced the **largest, most significant change** — impact aligned with the game's core mechanic.

In-Platform Confidence Trajectory (9 classes, 3 times)

Metric	T1	T2	T3	Δ
Math confidence	3.77	4.02	4.50	+0.73
Fraction confidence	3.47	3.88	4.32	+0.85
Game excitement	4.08	4.24	4.35	+0.27

Gains were **progressive at every checkpoint**, consistent with cumulative weekly practice effects.

Subgroup Findings

- **By grade:** 6th graders showed the largest gains (+2.10 math problems, +0.63 fraction confidence). 8th graders showed the largest anxiety reduction (-0.42).
- **By baseline skill:** Students entering with 0–5/11 correct gained +3.19 problems — more than tripling baseline. Largest gains consistently fell to lowest-starting students.
- **By confidence:** Low-confidence entrants (+0.67 conf., +2.20 math); low fraction confidence entrants (+0.93 frac. conf., +1.53 math).
- **By race/ethnicity (exploratory, small n):** Non-White students showed substantially greater reduction in fraction anxiety (-0.57 vs. -0.02 for White students, $p = .052$). Fraction confidence gains were nearly identical across groups (+0.49 vs. +0.51).

Implementation & Engagement

- Classes playing 16–18 weeks at high participation ($\geq 75\%$ most weeks) maintained strong confidence trajectories.
- Even low-participation classes showed positive confidence gains — likely a floor effect among students with the most room to grow.
- **100% of teachers (9/9) want to use FSML again.** 75% reported increased engagement, peer communication, and willingness to tackle challenging math.

Limitations

- No control group; gains cannot be attributed solely to FSML.RCT planned for Spring 2026.
- Matched sample skews toward more engaged students (higher baseline scores than full pre-survey).