



An innovative movement-based program to improve EF skills

Ashley F. McDermott, Ph.D.¹ & Chris Keegan²

¹Brains4Games Consulting, ²Move2Learn LLC

Introduction

Better EF skills lead to:

- ✓ Fewer behavior problems¹
- ✓ Greater resilience²
- ✓ Higher academic achievement³
- ✓ Improved effects of other interventions⁴

Teachers need an easy way to help their students improve EF.

Methods

Pilot studies conducted across two schools:

1. Private, high SES in AZ grades K-3
2. Public, low SES in NYC, grades K-2

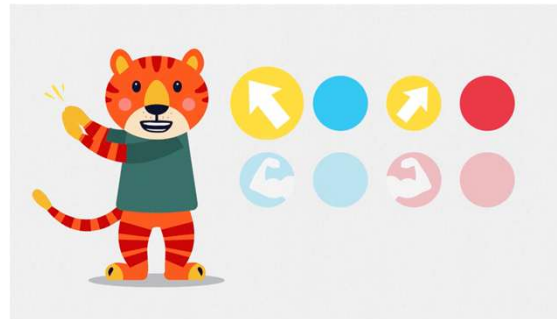
AZ included active control group enrolled in immersive foreign language program.

CogniMoves used over the course of a school semester, ~2-3x per day.

Conducted MEFS assessment at beginning and end of semester.

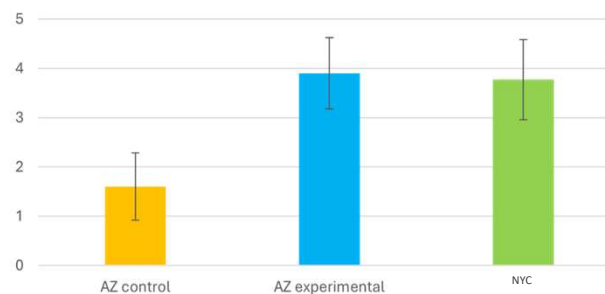
CogniMoves

Students learn to complete sets of movements in time with music (moving on the beat). They see and can plan for upcoming movements by reading the visual code. Each session is 5 minutes with an optional 1-minute breathing exercise at the end.



Results

Amount of Improvement in EF GoPro Scores



We calculated the delta of scores (post-test minus pre-test) to measure how much each group improved. The CogniMoves classes improved more than twice the amount of the control group (4 points versus 1.5 points on average). We ran a t-test to establish that the difference between groups in AZ was statistically significant at the $p < .05$ level.

Conclusions

- ✓ Teachers were able to complete CogniMoves 2-3x per day over one semester.
- ✓ Completing CogniMoves led to over 2x improvement in EF skills compared to active control group.
- ✓ Same levels of improvement seen in disparate schools in different states and with communities with different SES levels.
- ✓ This suggests that CogniMoves can be employed effectively and lead to similar improvements in EF skills in schools across the United States.

Bibliography

1. Romero-López, M., Pichardo, M.-C., Ingoglia, S., & Justicia, F. (2018). <https://doi.org/10.6018/analesps.34.3.307391>
2. Howse, R. B., Lange, G., Farran, D. C., & Boyles, C. D. (2003). <https://doi.org/10.1080/00220970309602061>
3. Willoughby, M. T., Wylie, A. C., & Little, M. H. (2019). <https://doi.org/10.1037/dev0000664>
4. Pasqualotto, A., & Venuti, P. (2020). <https://doi.org/10.1111/ldrp.12228>
5. Reflection Sciences <https://reflectionsociences.com/mefs/>