

# Impacts of Participating in a Competitively Engineered Youth Volleyball League

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**E S A** EDUCATIONAL  
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- **Competitive Engineering (CE)**



- Ideally, CE seeks to provide systematic modifications to the *competitive* environment of sport for the explicit purpose of providing a more positive experience. [1]
- Distinct from, yet related aims of, motivational climate.



# •CE Goals and Strategies

Rule Changes

Equipment Modifications



Facility Modifications

Competitive Level

# •CE Modifications

Increase Action & Scoring

- Modified service line.
- Lower net & bigger, softer ball.

High Personal Involvement

- Rotate in to serve.
- Require 1 pass per possession.

Keep Scores Close

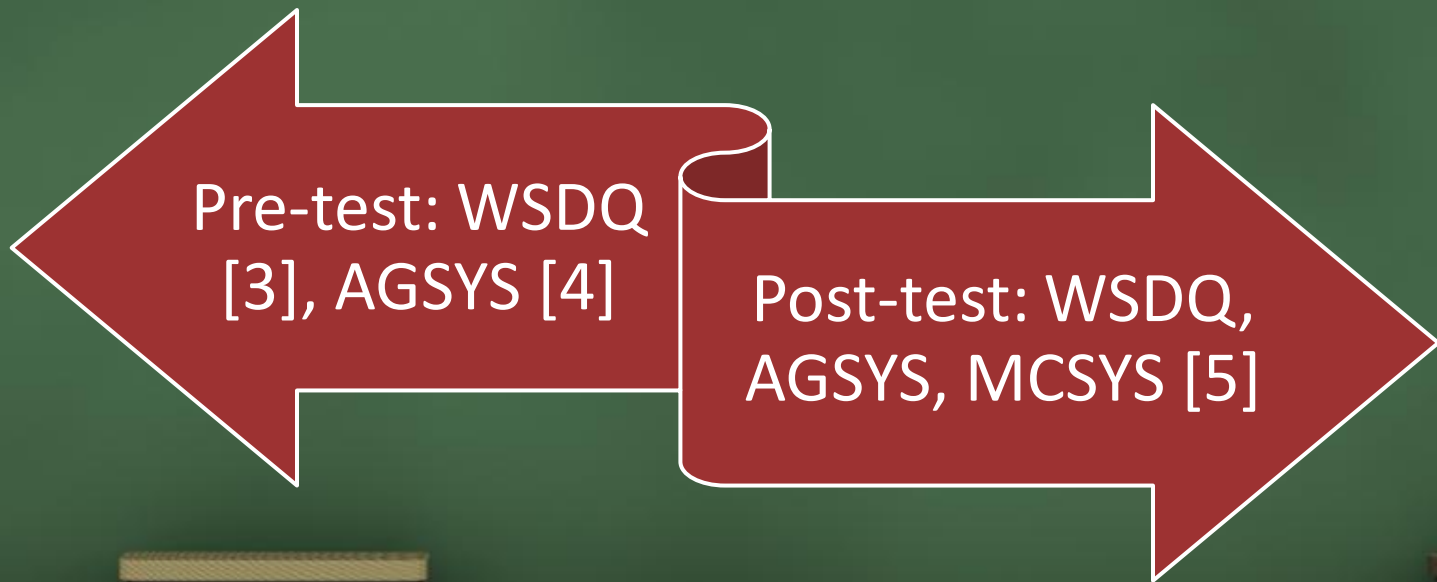
- Maximum of 5 serves in a row.
- Rally scoring.

Positive Social Relationships

- Team selection based on school.
- Required hand-shake post set.

# • Design of the Investigation

- IRB, consent and assent.
- 114 Female Youth Volleyball players:
  - Aged 9 to 14 years ( $M = 10.4$ ,  $SD = 1.14$ ).
  - Grade 4<sup>th</sup> to 8<sup>th</sup> (59% were 4<sup>th</sup> or 5<sup>th</sup>).
- All  $\alpha$  values acceptable. [2]



# • Results: Paired Samples T-tests

## Pre-test

- Positive Self-Esteem:  $M = 3.40$
- Negative Self-Esteem:  $M = 1.27$
- Task Orientation:  $M = 4.56$
- Ego Orientation:  $M = 1.86$



## Post-test

- Positive Self-Esteem:  $M = 3.34$
  - Negative Self-Esteem:  $M = 1.27$
  - Task Orientation:  $M = 4.50$
  - Ego Orientation:  $M = 1.67^*$
- 
- Mastery Climate:  $M = 5.33$
  - Performance Climate:  $M = 1.34$

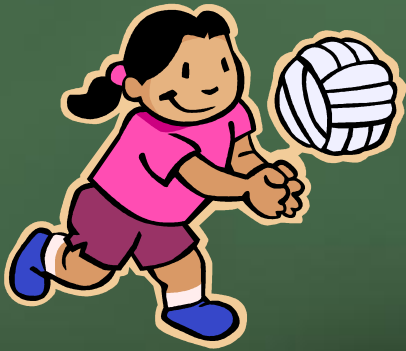
## • Results: MANOVA

- 4<sup>th</sup> ( $n = 29$ ), 5<sup>th</sup> ( $n = 39$ ), 6<sup>th</sup> ( $n = 38$ ) graders.
- No significant differences by grade level on pre- to post-test measures.
- Significant Main Effect,  $p = .002$ .
- Follow-up ANOVA:
  - **Performance Climate**,  $p = .020$ .
- Tukey Post-hoc  $p = .014$ :
  - **4<sup>th</sup> graders perceived a significantly more performance based climate than did 5<sup>th</sup> graders.**



# • Simple CE Model Questions

- Do you prefer games with close or far apart scores?
  - 72% ( $n = 102$ ) reported close scores preferred.
- Even though official league standings are not kept, do you keep track at home?
  - 50% reported yes.





# •Future Directions

- Plethora of options for future CE examinations:
  - Largest limitation is red-tape.
  - Quantity vs. Quality considerations.
  - Are there different strategies that best target particular CE goals?
  - Additional sports?
  - Causal relationship?



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# • Questions or For More Information

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# •References

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