

The Effect of Teaching Games for Understanding (TGfU) on Sport Motivation and Basketball Playing Skills in a Junior High School Basketball Extracurricular Program



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Introduction Problem

Root Cause:

Limited basketball experience since elementary school → Students enter junior high with low skills AND low confidence

indicator	Result	Theory
Student interest in basketball	Only 34%	Low intrinsic motivation
Joined due to external pressure	63%	SDT: Extrinsic > Intrinsic motivation
Anxious when shooting	57%	Low self-efficacy (Bandura, 1997)
Attendance rate	Only 52%	Low persistence
Shooting accuracy	45%	Still in cognitive stage (Fitts & Posner, 1967)
Passing effectiveness	52%	Lack of movement experience
Tactical decision-making	48%	Lack of game experience (Griffin et al., 1997)

Introduction TGfU solution



Why TGfU Solves the Problem?

Problem	How TGfU Fixes It
Low motivation (63% external pressure)	Gives autonomy (freedom to explore)
Low confidence (57% anxious when shooting)	Builds competence (success in real games)
Low attendance (52%)	Creates relatedness (team interaction)

Research Hypotheses

Hypothesis	statement
H1	TGfU has a significant effect on sport motivation
H2	TGfU has a significant effect on basketball playing skills
H3	There is a significant simultaneous difference between TGfU and control groups

Self-Determination Theory (Deci & Ryan, 2000)
fulfilling autonomy, competence, and relatedness needs →
intrinsic motivation increases



Method

Research Design

**Quasi-experimental,
nonequivalent control
group design**

**(Pretest → Treatment →
Posttest)**

Summary of Methods

aspect	details
Design	Quasi-experimental, nonequivalent control group (Pretest → Treatment → Posttest)
Participants	18 students (TGfU=9, Control=9), age 13-15
Instruments	SMS-II (motivation, $\alpha=0.790$) + FIBA Statistics (EFF Index)
Intervention	8 sessions, 2x/week, 90 min/session (TGfU: game-based; Control: conventional drills)
Analysis	Mann-Whitney U + Wilcoxon + Bonferroni ($\alpha=0.025$)

Result

Descriptive Statistics

Variable	Group	Pretest (M±SD)	Posttest (M±SD)	Gain (M±SD)
Motivation	TGfU	66.67 ± 10.44	73.56 ± 7.89	+6.89 ± 8.40
	Control	64.67 ± 5.41	72.78 ± 8.98	+8.11 ± 10.69
Skills (EFF)	TGfU	1.67 ± 3.20	2.22 ± 4.21	+0.56 ± 5.90
	Control	1.00 ± 2.12	0.89 ± 4.78	-0.11 ± 6.27

Hypothesis Testing Summary

Hypothesis	Test	comparison	sig	decision
H ₁	Wilcoxon	Pre vs Post (TGfU)	0.044	✓ Accepted
H ₁	Mann-Whitney U	TGfU vs Control	0.929	✗ Rejected
H ₂	Wilcoxon	Pre vs Post (TGfU)	0.395	✗ Rejected
H ₂	Mann-Whitney U	TGfU vs Control	0.824	✗ Rejected
H ₃	Bonferroni	Simultaneous	>0.025	✗ Rejected

Discussion

Finding 1: TGfU Improves Sport Motivation (Within Group) ✓

- 77.8% of participants (7/9) showed increased motivation
- $p = 0.044 \rightarrow$ statistically significant

Why? Self-Determination Theory (Deci & Ryan, 2000)

Need	How TGfU Fulfills It
Autonomy	Freedom to explore tactical solutions
Competence	Success in meaningful game contexts
Relatedness	Small-group interaction (3v3/4v4)

Finding 2: No Significant Difference Between Groups ✗

$p = 0.929 \rightarrow$ TGfU not superior to conventional approach

Why?

1. Control group also had free play (enjoyment factor)
2. Small sample ($n=9$) $\rightarrow$ low statistical power (Cohen, 1988)
3. Short intervention (8 sessions) $\rightarrow$ insufficient for notable difference

Finding 3: TGfU Did Not Improve Playing Skills ✗

$p = 0.395 \rightarrow$ not significant

Why?

1. 8 sessions insufficient for motor skill development (Fitts & Posner, 1967)
2. Basketball is a team sport $\rightarrow$ individual performance depends on team
3. Small sample + high variability
4. "Knowing-doing gap": know what to do $\neq$ can execute it
5. Conventional drills equally effective for basic skills short-term

Conclusion

TGfU effectively improves sport motivation when implemented consistently in extracurricular settings

77.8% of participants showed increased motivation

Motivation changes faster than motor skills

Affective constructs respond more quickly than motor-cognitive constructs

77.8% of participants showed increased motivation

Intervention duration matters,

**8 sessions sufficient for motivation,
12-16+ sessions needed for skill development**

Sample size affects detection

n=9 per group → limited statistical power

26+ participants/group needed for medium effect (Cohen, 1988)

References

Key References

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Additional References

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