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EXTENDED ABSTRACT

Comparison Between Internal and External Focus of Attention Instruction on Dart Throwing Performance Among Young Adults

Muhammad NurFarhan Mohamed Yusri[1], Maisarah Shari[2], Mardiana Mazaulan[1], Mohd Aizzat Adnan[1], Muhamad Noor Mohamed[1], Raja Nurul Jannat Raja Hussain[1], Muhamad Safiq Saiful Annur[1], & Noor Azila Azreen Md Radzi[1]*

[1]*Faculty of Sports Science and Recreation, Universiti Teknologi MARA, Negeri Sembilan Branch, Seremban Campus, Negeri Sembilan, MALAYSIA*

[2]*Faculty of Sports Science and Recreation, Universiti Teknologi MARA, Shah Alam, Selangor, MALAYSIA*

**Corresponding author: azila_azreen7172@uitm.edu.my*

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I. Introduction

Attentional focus has been widely recognized as a key factor in enhancing motor skill performance and learning across various domains [1]. Among the most commonly investigated forms of attentional focus are internal focus, which directs attention to the performer's own body movements [2], and external focus, which shifts attention to the effects of those movements on the environment [3]. While both strategies are frequently applied in instructional and coaching settings, a growing body of evidence suggests that external focus may promote more efficient, automatic motor control, particularly in tasks requiring accuracy [4]. However, the relative effectiveness of internal versus external focus appears to be influenced by variables such as skill level and age [5]. This study compares internal and external focus feedback to determine which strategy more effectively enhances dart-throwing performance among young adults.

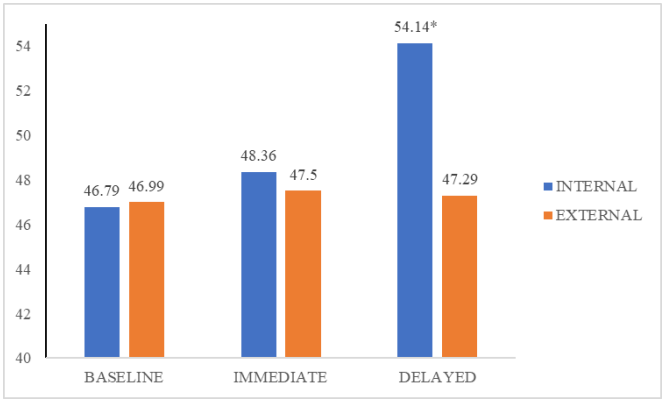
II. Methods

A total of 24 young adults were randomly and equally assigned to either an internal or external focus of attention group, with group allocation balanced using pre-test scores to ensure comparable skill levels. Following a nine-throw pre-test, participants completed 48 acquisition trials, organized into six blocks of eight throws (6 blocks × 8 throws). Verbal attentional focus instructions were delivered every two throws based on group assignment. Dart throwing performance was scored on a 0–10 scale according to accuracy. A nine-throw post-test was conducted immediately after acquisition, followed by a delayed retention test 24 hours later.

III. Results and Discussion

A. Effect of Internal and External Focus of Attention on Dart-Throwing Performance Among Young Adults

Paired t-test results for the internal focus of attention revealed no significant improvement in dart performance during immediate retention ($p > 0.05$), although there was a slight increase in mean scores from $M = 46.79 \pm 2.445$ to $M = 48.36 \pm 2.352$. However, a significant improvement was observed during delayed retention ($p < 0.05$), with mean scores increasing to $M = 54.14 \pm 1.414$, indicating enhanced long-term performance with internal feedback. For participants who received external focus of attention, paired t-test results showed no significant differences in dart performance for both immediate and delayed retention ($p > 0.05$). Mean scores increased only slightly from $M = 46.00 \pm 3.358$ to $M = 47.50 \pm 1.657$ in the immediate phase, and from $M = 46.00 \pm 3.358$ to $M = 47.29 \pm 1.943$ in the delayed phase.

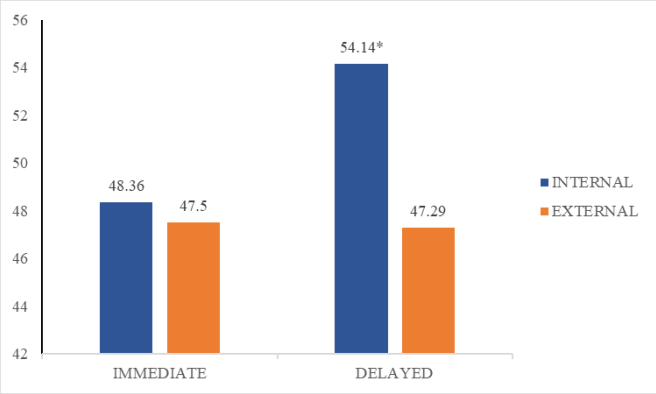


*$p < 0.05$

Fig. 1 Comparison of feedback types during baseline, immediate, and delayed.

B. Comparison Between Internal and External Focus of Attention on Dart-Throwing Performance Among Young Adults

Independent t-tests showed no significant difference in dart throwing performance between the internal and external focus groups during immediate retention ($p > 0.05$). Although both groups exhibited slight performance gains, the internal focus group showed a marginally higher mean score ($M = 48.36 \pm 2.352$) compared to the external focus group ($M = 47.50 \pm 1.657$). In contrast, the independent t-test for delayed retention revealed a significant difference between the two groups ($p = 0.008$), with the internal focus group achieving a higher mean score ($M = 54.14 \pm 1.414$) compared to the external focus group ($M = 47.29 \pm 1.943$).



*$p < 0.05$
Fig. 2 Comparison between feedback types during immediate and delayed retention.

IV. Conclusions

Although no immediate retention differences were observed, internal focus of attention demonstrated significantly greater effectiveness in enhancing delayed retention of dart-throwing skills. These findings highlight the value of internal focus of attention in supporting long-term motor learning, suggesting its potential as a beneficial instructional strategy for sustained skill retention. Internal focus of attention leads to better retention because learners become more adjusted to body mechanics, enabling self-correction and long-term skill refinement [6].

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