

## 棒高跳競技者における自己観察内容と客観的評価との関係について

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### 【目的】

棒高跳のパフォーマンスに影響を及ぼす要因を質的調査と量的調査から明らかにし、両者の関係について事例的に検討すると同時に、研究手法の妥当性を検証することを目的とする。

### 【方法】

上級棒高跳競技者3名を対象とした。実験試技の内、被験者の運動感覚を基に判断された成功及び失敗試技について、主観的評価の分析として運動意識調査及び運動内観調査を行い客観的評価の分析としてキネマティクスデータを分析した。両分析法から得られた結果を基に、両側面の共通点や差異について比較検討を行った。

### 【結果】

1. 競技者が特に重要視する技術は「助走後半から踏切および突っ込み動作までの一連の動作」でありポールの反発に乗る技術については競技者間の運動意識に差が見られた。
2. 棒高跳競技者が自己観察内容を基に試技の成功及び失敗を判断する際、走幅跳競技者と同様に、主に助走局面と踏切および突っ込み局面における動作の出来を基準に判断される報告が多くみられた。
3. 客観的評価から成功及び失敗の差異を検討した結果、踏切および突っ込み局面における体幹角度、ポール伸展局面におけるIP出現時、PS時における体幹角度に差がみられた。

### 【結論】

本研究では、競技者が自己観察内容を基に試技の成功及び失敗を判断する際、客観的評価と同様の判断がみられる場合とみられない場合があった。棒高跳競技者の自己観察内容と客観的評価のすり合わせを行う際、助走局面においては、コーチの他者観察や客観的な測定から得られた情報を競技者の自己観察内容に落とし込む必要があり、踏切及び突っ込み局面とポール伸展局面においては、競技者の自己観察内容や感覚に任せて技術練習に取り組ませることも良いのではないかと考えられる。

また本研究においても、先行研究と類似した結果が得られたことから、競技者の自己観察内容と客観的評価を比較する手法は両者の関係を検討する研究手法として妥当であることが考えられる。

## Relationship between introspective analysis and objective evaluation in pole vaulters

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### [Purpose]

This study aimed to clarify the quantitative and qualitative factors that influence the performance of elite pole vaulters, investigate the relationship between these factors using the case study method, and examine the validity of the research method.

### [Methods]

Three elite pole vaulters participated in this study. Each participant performed the vaults with a full-approach run, and these vaults were judged as successful or failed based on their motion perception. Motion consciousness survey and motion introspective survey were performed to determine the subjective evaluation of the participants. The measurements of the vaults performed by the participants were analyzed for objective evaluation. The results obtained from both evaluations were compared and investigated.

### [Results]

1. The participants particularly considered the "sequence of movements from the last phase of the run-up to take off movements" as important. However, there were differences in motion consciousness between athletes during the pole straightening phase.
2. When the elite pole vaulters judged the success or failure of their performances in the subjective evaluation based on introspective analysis, their judgements were mainly based on their performances in the "run-up phase" and the "take-off phase", same as that of elite long jumpers.
3. The results of the objective evaluation showed that the differences between the successful and failed attempts were in the angle of the upper trunk in the take-off phase, appearance timing of the IP (Inverted position : the instant when both hip joint angles change from flexion to extension), and angle of the upper trunk at the instant of the PS (Pole straight : the instant when the pole recoiled).

### [Conclusion]

The results of the comparison and investigation of the successful and failed attempts from both subjective and objective viewpoints indicate that the success-failure differences do not always appear during the common motion phase. During training and competition, it is necessary to incorporate the information obtained from the coach's observation and objective measurements of the athlete's self-observation in the "run-up phase," and it may be better to let the athlete train based on their self-observations and sensations.

In this study, similar results to previous studies were obtained; therefore, this research method that compares the athlete's self-observation to objective evaluation is a valid research method for investigating the relationship between both viewpoints.