助走付五段跳における補助器具の利用が跳躍に及ぼす即時的影響
－跳躍距離およびシザース動作に着目して－

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【要 旨】

本研究は, 筆者が考案した補助器具を装着して助走付五段跳を実施させることによって, 助走付五段跳の跳躍距離およびシザース動作に及ぼす即時的な影響について事例的に検討した.

補助器具を装着して助走付五段跳を実施させると, 接地時間および滞空時間が長くなり, 総跳躍距離は 18.01m から 18.29m へ延伸した. その後, 補助器具を外した Post 測定では総跳躍距離が 18.74m となった. 補助器具を装着することによって, 接地時の体幹部の前傾および踏切脚の後方への流れを抑えることができたこと. また, 踏切脚の引きもどし動作と自由脚の振込動作からなるシザース動作を即時的に強調することができたことによってブレーキロスを少なくするとともに, 踏切脚への予備緊張を与えて筋力発揮能力を高め, 大きな鉛直力積（鉛直速度）を獲得することで, 跳躍距離の延伸に影響を及ぼしたと考えられた. 考案した補助器具はシザース動作を即時的に強調させる手段の一つとなる可能性が示唆された.

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Effects of a newly developed auxiliary equipment for the 5-step jump with approach run: jumping distance and scissor action

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Key words: five-step jump with approach run, auxiliary equipment, active landing, step-in motion

[Abstract]

The present study examined effectiveness of auxiliary equipment that the authors developed for improving jumping distance and scissor action in the air in the five-step

jump with approach run.

The participant in the study was one male university student. When wearing this auxiliary equipment, he extended his time on the ground before taking-off and in the air during jumping, and his total jumping distance improved from 18.01 m to 18.29 m. In post measurements taken when he was not wearing the auxiliary equipment, his total jumping distance further improved to 18.74 m.

Possible reasons for these changes after practice while wearing this auxiliary equipment are as follows:

1) The jumper could control the trunk of his body which had tended to bend forward, as well as his taking-off foot which had tended to move toward the back.

2) The jumper could strengthen the scissor action in the air that consisted of the returning action of the taking-off foot and the swinging action of his free foot.

3) The jumper could give preliminary tension to his taking-off foot, which reduced the breaking loss and increased the exertion of muscle power.

4) The jumper could get a higher vertical speed, which resulted in longer jumping distances.

The newly developed auxiliary equipment may be a useful tool for quickly strengthening the scissor action.