ABSTRACT

Title: Biomechanical characteristics in Axel Paulsen jump variations in figure skating

Objectives: The aim of this thesis was to measure the biomechanical characteristics (height and length) of the single Axel Paulsen jump. The jump was measured from two inputs, namely from a standing position (from zero initial velocity) and from a running position (from a single backward translation).

Methods: For the thesis, a quantitative research method was used, namely the measurement of selected parameters of the Axel Paulsen single jump. The measurements were performed on a sample of 16 female figure skaters, in the age range of 10 -16 years. Bar graphs were created for each variable as part of the analysis. The best trials were always selected for quantitative analysis. Furthermore, means and standard deviations were calculated. Due to the size of the measured sample, non-parametric methods were used to test the hypotheses. The Wilcoxon matched pairs test was used, and error plots were generated. Data analysis and graphs were created using IBM SPSS Statistics 24 statistical software.

Results: It was found that the single Axel Paulsen jump length values are longer in the run-up version. For the Axel Paulsen single jump height values, it was found that the jump height on the average is 0.5 cm higher in the standing version than in the running version (one backward fold) - these values were obtained from the table of best measured results.

Keywords: figure skating, Axel Paulsen, jumps, biomechanics, height, length