Title	スノーボード初心者のためのスノーボードシミュレーターを用いた重心転換学習支援システムの開発
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Citation	
Issue Date	2024-03
Type	Thesis or Dissertation
Text version	author
URL	http://hdl.handle.net/10119/18967
Rights	
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Abstract

Snowboarding is a winter sport that is widely watched and loved around the world. For beginners, the process of learning to snowboard can be both challenging and dangerous. In particular, beginners often face high learning costs when it comes to mastering basic skills such as pushing slopes (straight-line skating) and falling leaf drifts (left-right lateral skating). The aim of this study is to develop a snowboarding simulation system, especially for snowboarding beginners to practice the push slope and lateral leaf float gliding, through the training of the center of gravity and foot pressure, to help beginners to practice the center of gravity to turn off the practice, to fill the gaps of the simulator system in the practice of snowboarding skills for beginners.

We improved the ski simulator system and developed a training system that meets the needs of beginner snowboarders' center of gravity transfer exercises. An experiment was designed to evaluate the effectiveness of the system. In addition to collecting qualitative data, we will be able to obtain results on the participants' performance during the test. The experiment will include the control of the visual feedback of the interface and the complexity of the skiing course to test the effectiveness of the system in supporting the learning of the snowboarding skill of shifting the center of gravity.

The final result is that for different beginners, the effectiveness of visual feedback on skill acquisition varies from person to person. One group preferred System B with the complex heat map and found it useful for future skill improvement. Another group felt that System C, without visual feedback, would allow them to focus more on improving their performance and thus gain skill. By analyzing the data from each group, it was concluded that the system could be useful for beginner snowboarders to learn the skill of center of gravity transformation. It can help beginners to learn snowboarding skills.

We conclude with recommendations for improving the system. The current system is only suitable for beginner snowboarders, and it is expected that based on the above suggestions, we can conduct research on visual feedback, auditory feedback, and tactile feedback in the system to provide a more realistic sports simulation experience in the future.