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# Motion controls in a first person game

## A comparative user study using various input methods

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# ABSTRACT

**Context.** Virtual reality is getting closer and closer to being realized with new technologies emerging. This will lead to new ways to experience interactive worlds such as games. In order to keep the highest immersion possible new ways of interaction are needed.

**Objectives.** In this thesis a control method using motion tracking devices such as the PlayStation Move and the Microsoft Kinect is examined as a method of interaction. This is then compared to the use of a gamepad in a prototype first person puzzle game without a virtual reality device. The aim is to discover how it affects the experience in terms of ease of use, immersion and fun factor as well as how it affects the efficiency of the player when completing the same in-game tasks. With this information it's hoped to get an indication of how viable motion controls can be in a first person game and as a theoretical interaction method for virtual reality.

**Methods.** To compare the control methods user studies are conducted with eight participants who play the prototype game using the two control methods and complete test chambers where their effectiveness is recorded. They are then interviewed to learn what they thought about the control methods and the experience.

**Results.** Results consisting of time and points from the test chambers and answers from the interviews are compiled and analyzed.

**Conclusions.** Analyzing the results of the user studies it is concluded that using motion controls rather than a traditional gamepad decreases the effectiveness of completing in-game tasks. There is an indication that motion controls increases the fun factor and immersion of the experience overall. The motion controls examined needs some getting used to and higher precision in order to be as effective as a gamepad but developing motion controlled games with the limitations in mind can give benefits such as higher immersion and fun factor.

**Keywords:** Gestural input, Interaction devices, Virtual reality