

Abstract

Title: Esport in people with upper limb disabilities

Objectives: The first objective of the thesis is to find out the possibilities of compensation for video game players with upper limb disability. Subsequently, to find out how players can use them and to collect individual experiences of players with the given peripherals. The second objective is to evaluate the use of compensatory aids from an ergonomic point of view and the involvement of the upper limb during playing with the use of aids. Including optimization possibilities for more effective use of compensatory aids from an ergonomic perspective in order to minimize demands on the musculoskeletal system.

Methods: The data were obtained in the form of a qualitative case study. The selected respondent in this study was medically diagnosed with congenital aplasia of the right upper limb, involving the complete absence of part of the forearm and the hand. A semi-structured interview was used to collect the data, which were further analyzed using open, axial and selective coding. The thesis also included an ergonomic analysis using the RULA and REBA checklists in order to assess the risk of musculoskeletal problems when playing with an adaptive controller.

Results: The results of the qualitative analysis showed that playing with the use of the Xbox Adaptive Controller complemented by an external peripheral in the form of the Logitech Adaptive Gaming Kit does not bring the respondent subjective improvement in gaming performance compared to a classical gaming peripheral. This is mainly due to slower control speed and larger spatial layout of the adaptive controller. The player did not report any problems from the technical side of the functionality and compatibility of individual parts of the adaptive controller, with the exception of the impossibility to use the adaptive controller with the classical one at the same time. However, ergonomic limitations were described, mainly associated with a greater range of motion when controlling the adaptive controller. The results of the ergonomic evaluation confirmed medium to higher risk of musculoskeletal problems. The aim of the qualitative analysis is to determine the need for individual optimization of the adaptive gaming controller for players with upper limb disability. Each player is limited by their own capabilities, which the adaptive controller should be able to anticipate in order to enable the player to play.