Current evidence supports the idea that children’s physical activity is highly variable, and may be influenced by a variety of factors. Potential factors known to alter children’s physical activity behavior that were examined within this dissertation include the use of mobile, internet-connected devices (e.g., tablet computers) or with whom children play (e.g., parents, peers). Therefore, the purpose of Specific Aim #1 was to measure physical and sedentary activity with and without the presence of an Apple iPad in a gymnasium. The purpose of Specific Aim #2 was to measure children’s physical and sedentary activity on an outdoor playground during three conditions: playing alone, with their parent participating, and with their friend participating. Twenty children participated in each study where physical and sedentary activity was monitored. Results of Specific Aim #1 concluded that children accumulated fewer accelerometer counts and increased their sedentary behavior ($p \leq 0.05$) with the iPad present ($1748 \pm 1321$ counts, $21.6 \pm 13.5$ min sitting) versus without the iPad present ($3328 \pm 781$ counts, $6.2 \pm 5.0$ min sitting). The results of Specific Aim #2 concluded that children accumulated fewer sitting minutes and greater physical activity ($p \leq 0.05$) when playing with their parent ($2.7 \pm 7$ min sitting, $87503 \pm 37063$ counts) or friend ($0.9 \pm 1.4$ min sitting, $93363 \pm 22608$ counts) versus when playing alone ($7.8 \pm 8.2$ min sitting, $70672 \pm 35228$ counts).
These results provide additional information when creating physical activity interventions with the overall goal of increasing children’s physical activity behavior.