



Self-Determination Theory in Individuals with Disabilities



Tylor Davis
Cal Poly Humboldt
Kinesiology Department

Introduction

The World Health Organization (WHO) recommends children (5-17 yrs) with disabilities get at least 60 minutes of exercise at least 3 days a week. Exercise can be defined as “a potential disruption to homeostasis by muscle activity that is either exclusively, or in combination, concentric, eccentric or isometric” (Winter & Edward, et al., 2009). SDT defines the extrinsic and intrinsic motivation factors that shape development and personality (Legault, 2017). SDT is centered on the basic psychological needs of autonomy, competence, and relatedness and their necessary role in self-determined motivation, well-being, and growth. Adults with disabilities are “shown to be less active and have higher rates of chronic disease than the general population” (Carroll, et al., 2014). SDT is based on the idea that humans have a basic need to feel autonomous, competent, and connected to others. When these needs are met, people feel satisfied and happy. SDT has been used to explain a wide range of behaviors. (Legault, 2017). SDT rests on the notion that the individual is involved continuously in a dynamic interaction with the social world (Legault, 2017). The SDT perspective on motivation emphasizes the importance of social contexts and relationships in the development and sustenance of motivation (Legault, 2017). The SDT perspective on motivation also emphasizes the importance of individual differences in motivation (Legault, 2017).

Methods

The purpose of this study was to determine the impact of the implementation of self-determination theory and a structured exercise program to increase exercise performance for an adult with a disability.

Subject

The participant is one white 18 year old male, he is a junior at a local public high school. He participates in physical activity during school three times a week. He frequently enjoys interacting with other people and has expressed interest in post-secondary education.

Setting

The setting of this study was conducted in the Student Recreation Center (SRC) in the field house and in the gym at Cal Poly Humboldt. In the field house, there were cones set up every 10 ft (3 yards) on the turf. The participant completed curl-ups and modified push-ups. Following this the student completed a workout regime of six different exercises in the gym.

Dependent Variable

The dependent variable was the number of laps of self-paced walking for 6 minutes of 100 feet. The number of wall push-ups completed in 1 minute and the number of sit-ups completed in 1 minute.

Independent variable

The independent variable was using the self-determination theory to allow the participant to make their own goals and what type of exercise plan they wanted to follow in the gym.

Design

A changing criterion design was used to evaluate the effects of the gradual increase of the goal for each assessment. Each week a criterion of performance was established based on the baseline data.

Baseline

Baseline data was collected on the first meeting day with the participant, baseline data was collected and recorded as week 1. Baseline data consisted of the participant completing a 6-minute walk between cones spread out 100 feet apart, modified knee push-ups, and sit-ups.

The intervention

Baseline data was conducted throughout, the goals of the intervention were discussed and set on the first day, after the initial completion of the 6 minute lap, one minute push-up, and 1 minute sit-up. The participant was reminded of the goals before beginning each activity in order to reach the end goal set together. Positive praise was used to keep the student engaged throughout the activity. Peers were present throughout the intervention process as well as other Cal Poly students.

Data Collection

Data was recorded and written down after each assessment. The document used to record data was a paper document with a table of columns with the current week and a column with the criteria of performance for the week and another column listing the completed laps, push-ups, or sit-ups completed. Each week had new criteria of performance which would be adjusted based on the previous week's completed scores.

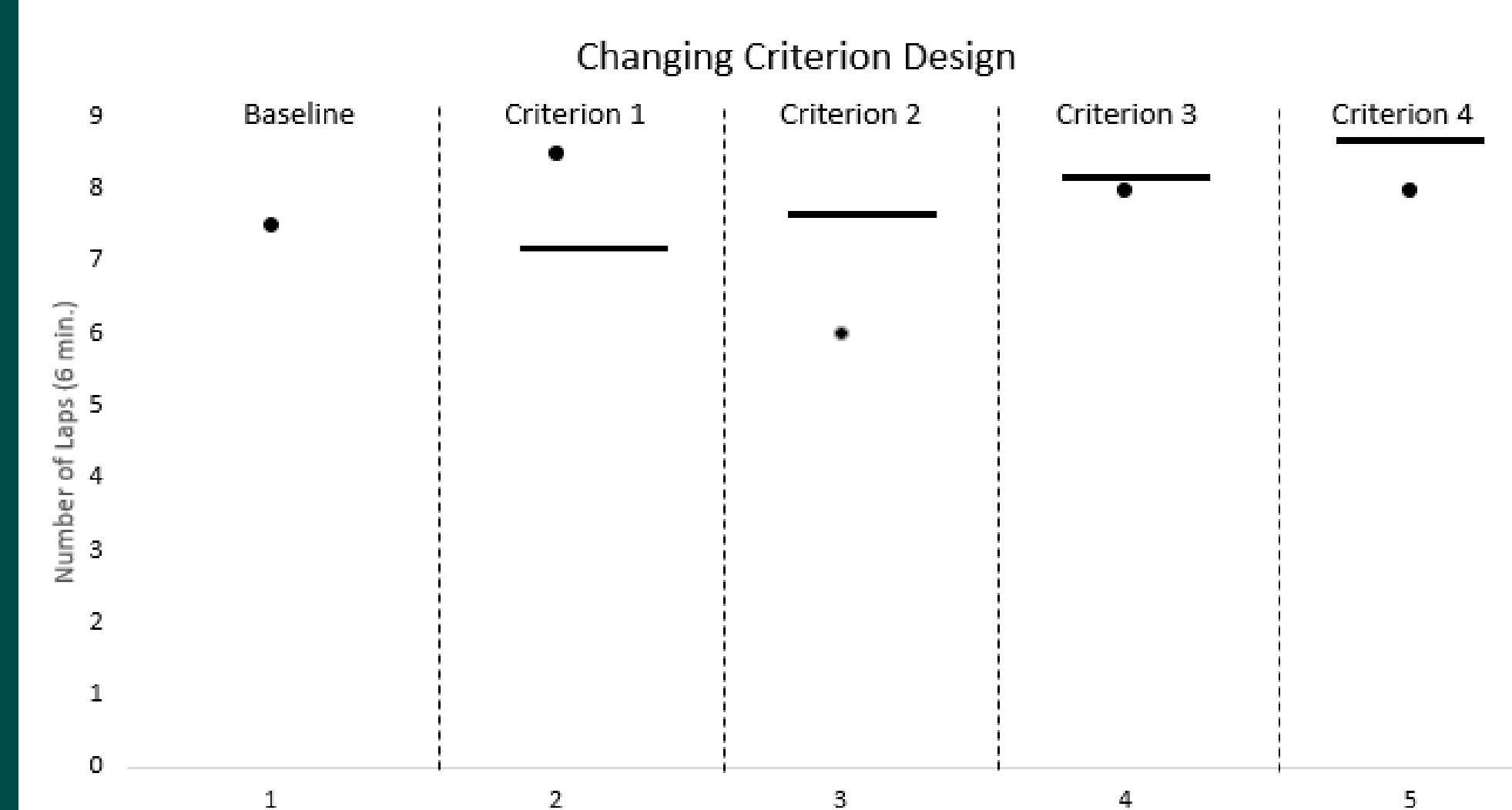
Results

This study utilized a changing criterion design over the course of 6 weeks. Following the SDT the participant was provided the opportunity to establish their exercise goals. Below is a demonstration of the participant's performance across the 6-week time frame in meeting those goals.

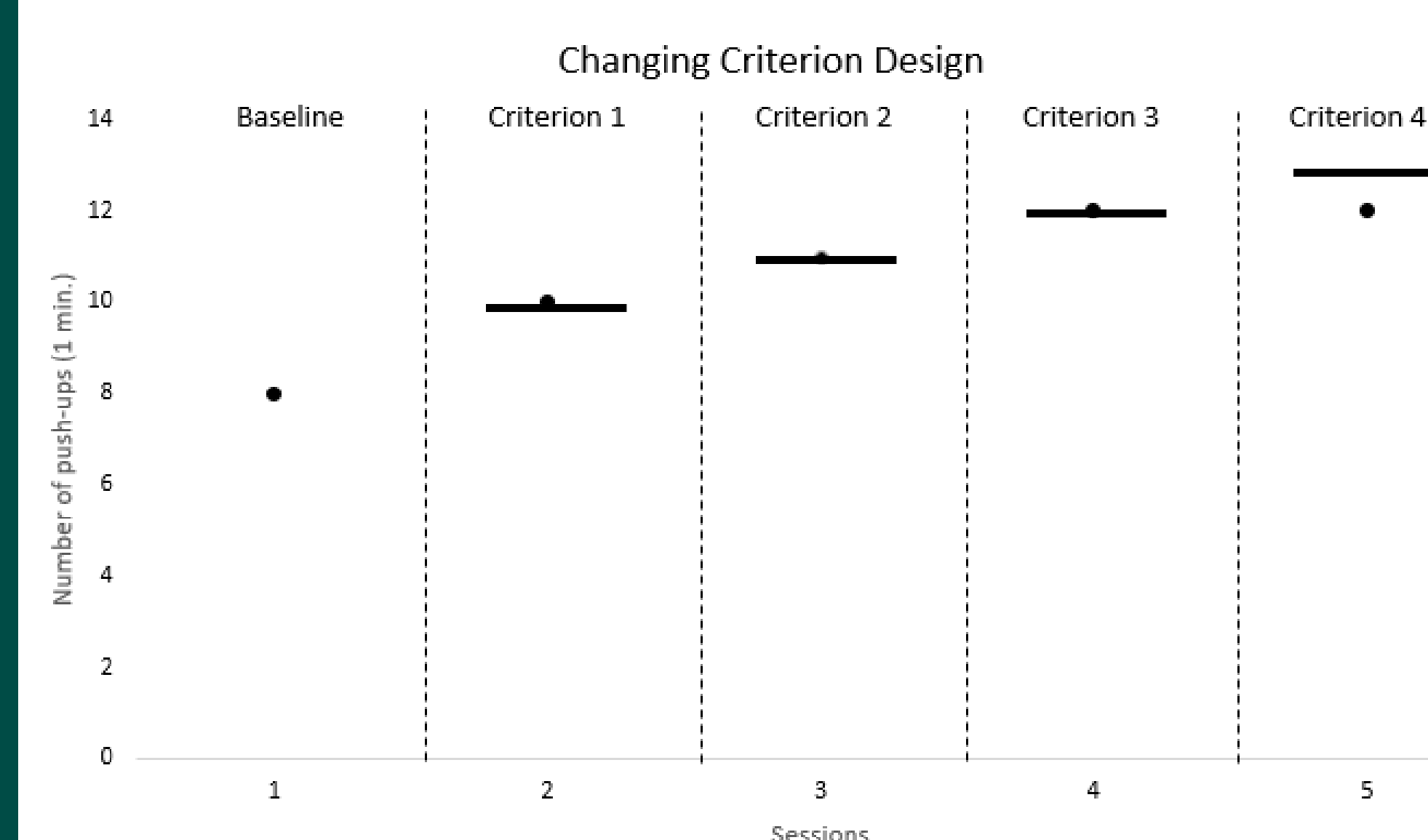
Baseline Phase

All baseline data was collected on the first day of the program. For the 6-min walk the participant completed 7.5 laps. Additionally, the participant completed 8 push-ups and 13 curl-ups within the 1-min time frame. During the exercise portion of the baseline phase the participants heart rate (HR) was at a resting level of 60 and average level of 21 for the 90 minute duration and a peak level of 139.

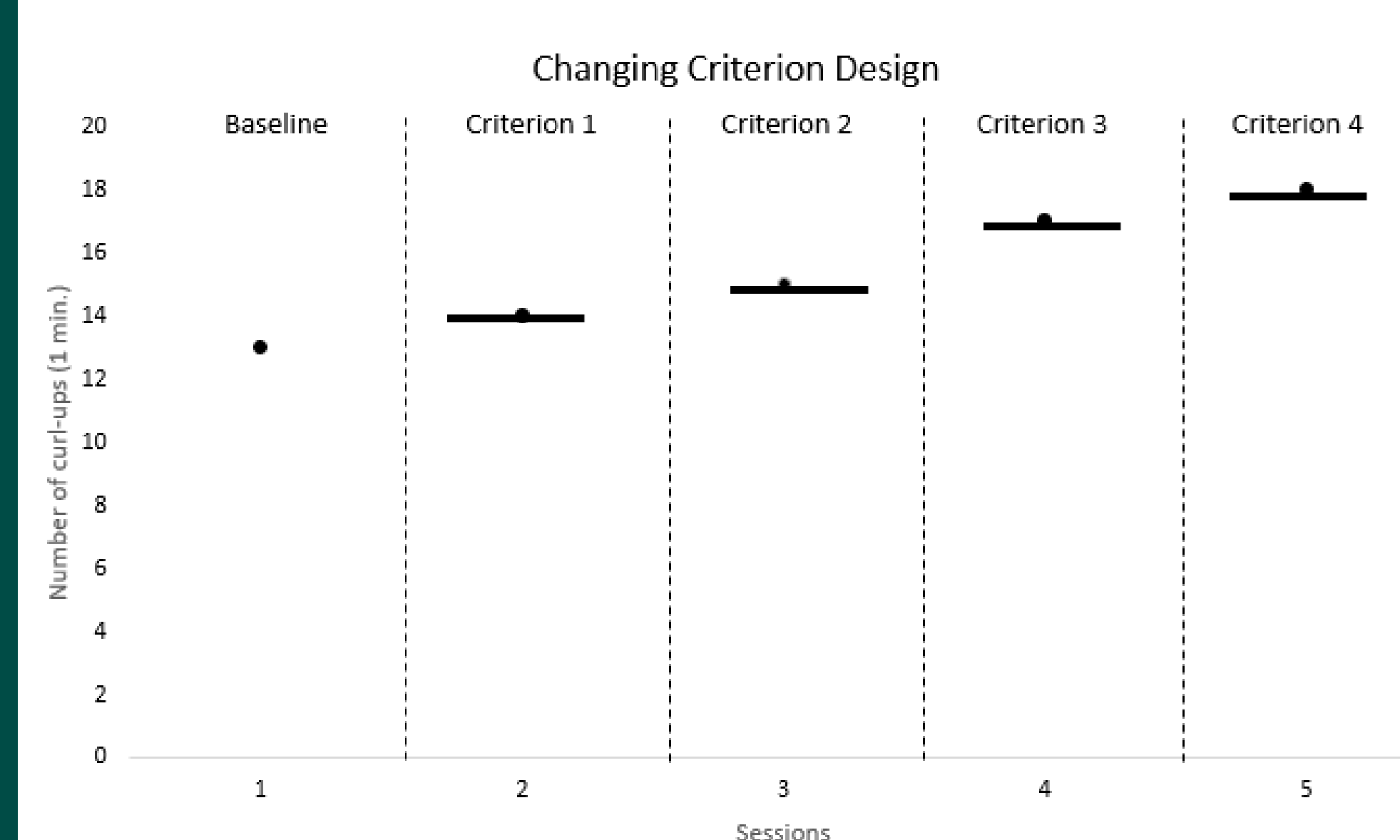
The total number of laps completed by Participant



The total number of push-ups completed by Participant



The total number of curl-ups completed by Participant



Participant 1

The participant is a white 18 year old male, who is currently a junior at a local public high school. He participates in physical activity during school 3 times a week. He frequently enjoys interacting with other people and has expressed interest in post-secondary education.

Criterion Phase 1

During the criterion phase 1 the participant completed 8.5 laps within the 6-min walking test. Additionally, the participant completed 10 push-ups and 14 curl-ups within the 1-min time frame. During the exercise portion of criterion phase 1 the participants HR was at a resting HR of 60 and a peak HR of 139. Further, the participant remained at a moderate HR level for 20 of the 90 min of the program.

Criterion Phase 2

During the criterion phase 2 the participant completed 8.5 laps within the 6-min walking test. Additionally, the participant completed 10 push-ups and 14 curl-ups within the 1-min time frame. During the exercise portion of criterion phase 1 the participants HR was at a resting HR level of 59 and a peak HR level of 139. Further, the participant remained at a moderate HR level for 21 of the 90 min of the program.

Criterion Phase 3

During the criterion phase 3 the participant completed 6 laps within the 6-min walking test. Additionally, the participant completed 11 number of push-ups and 15 number of curl-ups within the 1-min time frame. During the exercise portion of criterion phase 1 the participants HR was at a resting HR of 59 and average HR of 31 and a peak HR of 161. Further, the participant remained at a moderate HR level for 31 of the 90 min of the program.

Criterion Phase 4

During the criterion phase 4 the participant completed 8 laps within the 6-min walking test. Additionally, the participant completed 12 push-ups and 17 curl-ups within the 1-min time frame. During the exercise portion of criterion phase 1 the participants HR was at a resting HR of 60 and average HR of 34 and a peak HR of 147. Further, the participant remained at a moderate HR level for 34 of the 90 min of the program.

Criterion Phase 5

During the criterion phase 5 the participant completed 8 laps within the 6-min walking test. Additionally, the participant completed 12 push-ups and 18 curl-ups within the 1-min time frame. Below is an illustration of the participants' performances across the 6-min walking test, push-up test, and curl-up test. The participants heart rate was not recorded during this phase of the intervention.

Discussion

The purpose of this study was to explore the effects of a self-determination theory-based exercise program on exercise performance of adults with disabilities. The researcher hypothesized that the program would improve exercise performance by establishing the major components of SDT within the exercise program. The results suggested that the participant was able to meet a number of self-established goals by the end of the program.

Limitations

The limitations of this research paper included a lack of time due to only being able to meet once a week. To counter this, a structured system was implemented which included a warm-up, 6 minute push-up, 1 minute curl-up, and an exercise regime. Additionally, the length of the study was a limitation, however, this was mediated by modeling correct behavior that the participants could follow outside of the study.

Future Research in this Area

The small sample size may mean that the results are less reliable and generalizable, but it is still possible to draw some valid conclusions from the study. Additionally, research on the effects of SDT on individuals with disabilities is still relatively new, so it is important to consider the results in light of the current state of research. As more studies are conducted with larger sample sizes, it will be possible to gain a better understanding of the effects of SDT on individuals with disabilities and to make more informed decisions about its use.