

Running Head: Getting Ready

**Project 2: Procedure Learning – Analysis Document**

**Getting Ready for Your Workout**

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### **Overview**

This team is developing a “Getting Ready for Your Workout” course to cover procedures for warming-up before general fitness cardio or weight-lifting exercises.

Cheetah Gyms, a three-gym chain in Chicago, IL, will use the class and accompanying Web materials as part of a series of classes on exercise fundamentals to be taught at their locations in the Andersonville and Edgewater neighborhoods. The accompanying Web materials will be made available on the company’s Web site.

This analysis has been completed through interviews with subject-matter experts, reviews of books written by subject-matter experts, [interviews with potential attendees], and observation of the gym facilities and the members’ use of them.

### **Goals and Need Analyses**

Cheetah Gym’s main objective for developing this course is retaining members once they have joined. Research on exercise adherence indicates that mental preparation, variety of exercise, prevention of injury, and awareness of fatigue are central factors in determining whether individuals continue on – including those just beginning an exercise routine and more practiced athletes.

The first group of gym members is those that have just begun a work-out routine. According to literature developed by the National Institute for Health, there are three main barriers for individuals trying to be more active: place barriers, health barriers, and personal barriers. Individuals at Cheetah Gym have already chosen to overcome the place barrier (that is not having an appropriate place to exercise because it is too cold

or because they are afraid of crime) by buying a monthly subscription to the gym. The “Getting Ready for Your Workout” course in combination with guidance from the gym members’ medical care provider will address anxieties regarding three concerns in particular (NIH 2006):

- Barrier a: I am afraid I will hurt myself
- Barrier b: Lack of variety (e.g., Getting on a treadmill or stationary bike is boring)
- Barrier c: I do not have time/energy to workout

The second group of individuals is those that currently have or have had a more established pattern of exercise. In particular, this includes those that are seeking a new routine due to life changes (college athlete to working adult; injury or health concern that prevents some types of exercise) as these individuals are more likely to attend a course on .

According to an article on exercise adherence, individual success rates depends on psychological and situational factors that increase, rather than decrease motivation (Sullivan 1991). Adherence (and high motivation) requiring starting new behaviors and maintaining them. This is achieved by a locus of control and continued motivation. Establishing a locus of control means members are attributing success to their own actions. For this reason, the course is designed to teach the participants how best to warm-up for an individual, rather than a group exercise program. It also emphasizes the appropriate duration and intensity of exercise. This is because a key to continued motivation is initiating exercise with a moderate program and increasing it at an

appropriate rate to minimize injuries. To summarize, the barriers for more individuals with a more established routine are:

Barrier d: Lack of self-direction and control; e.g., relying on external factors (group exercise plans and personal trainers) exclusively

Barrier e: Starting up exercise too quickly; e.g., injuring themselves when they start a new routine or type of exercise such as weight-lifting

The course, "Getting Ready for Your Workout" is intended provide members with a structured approach to warming-up that will encourage the appropriate variety of exercises (by teaching both cardio and weightlifting warm-ups), and an appropriate duration of exercise (by having the members' decide this prior to starting the work-out).

These concerns are addressed through the following subgoals:

Subgoal 1: Plan to have the best workout yet (Barriers a, b, c, d, e)

Subgoal 2: Get the body generally ready to work: (Barrier a, e)

Subgoal 3: Rehearse specific muscles, joints, nerves (Barrier a, b, e)

Subgoal 4: Avoid fatigue (Barrier c, d, e)

Cheetah Gym also reduces its general liability by offering this course. Members are most likely to hurt themselves when they have not warmed up properly.

## **Context Analysis**

### ***Orienting Context***

Morrison, Ross, and Kemp (2004) identify three components of the learners' orienting context: learner goals, perceived use of instruction, and perception of accountability.

Taking into account the learner's perception of accountability for the content, we will address this issue by the use of live demonstrations, continued encouragement by staff members, coaches or trainers (Morrison, Ross, and Kemp, 2004, pp. 65-66). Support materials for at home practice will be available online. The learner will be encouraged to participate in warm-up exercises during each visit to the gym or prior to participating in any exercise program. This continued follow-up will promote learner accountability.

Learner goals and perceived use of instruction are discussed further under learner motivation.

### ***Instructional Context***

The instruction will take place in two contexts: the first is in the group exercise room of each of the Cheetah Gyms in Chicago and the second is on the company Web site. This analysis is based on observation of the facilities and discussions with the staff.

The group exercise rooms are the only space in each facility which will hold a significant number of people in a focused setting. Based on the factors to consider in analyzing the instructional environment, these classrooms have several limitations:

- **Noise:** The classrooms are not well insulated from noise coming from other parts of the gym. In the Andersonville location, the group exercise room is on the ground floor and looks out onto the street, and there may be both visual and auditory distractions from traffic outside.
- **Equipment:** Projector equipment and a screen will need to be brought in from outside and set up in such a way that it will not get in the way of the instructor working with individual class members and allow anyone to trip over it.
- **Room size:** The group exercise room in the Andersonville location can hold approximately 15 people. The group exercise room in the Edgewater location can hold approximately 20 people.

There are several advantages to the locations, however:

- **Access to Transportation:** Though the Andersonville location does not have its own parking, a significant majority of gym members live in walking or bicycling distance from the gym. This location has a number of bicycle racks outside and is walking distance from the CTA Red Line train as well as the 22 and 36 bus lines. The same is generally true of the Edgewater location, though it does have a small parking lot. The Edgewater location is also near the CTA Red Line train and 36 bus line.

- Within the Transfer Context: All attendees are either members or the guests of members and will know where to find the facility. This also gives them a chance to become comfortable in the facility and get to know other members.

As noted, the information will also be presented as an online tutorial through the company's Web site. The Web site currently already requires Flash and QuickTime plug-ins. Any materials used for the Web site will need to be cross-platform compatible so that employees and members can view them on Windows-based machines at home or work or from a Macintosh, such as those in the gym's juice bar and in-use in the gym's offices in both locations.

### ***Transfer Context***

While learners could theoretically apply what they learn to their workouts in another gym or to workouts outside of the gym, the majority of learners will apply what they learn in a Cheetah location. In order to better understand how the learners might use what they learn, the team observed member usage of the various areas and types of equipment at the two locations where the class will be offered.

The Cheetah facilities in Andersonville and Edgewater roughly follow a traditional gym layout, with separate areas for group exercise, cardio equipment (such as rowing machines, treadmills, and elliptical machines), weight-lifting machines, and free weights.

During the observations of members' use at the Andersonville location, the majority of users tended to use weight-lifting machines and cardio equipment, followed

by the group exercise classes, followed by the free weights. Several users were using the designated warm-up and cool-down areas.

During observations of the Edgewater location, the majority of members used the cardio equipment, followed by the free weights. Almost no users were using the weight-lifting machines, and no users were in the designated warm-up and cool-down area.

### **Learner Analysis**

Morrison, Ross, and Kemp note that “It is essential...to give attention to the characteristics, abilities, and experiences of the learners – both as a group and individuals” (2004, p. 56). The learner attending group warm-up exercise sessions, who is either a gym member or a gym member’s guest, will need instruction and demonstration in order to duplicate the process for preparation to participate in a chosen area of exercise or sport. The learner viewing the instructional material online, who may be a gym member or just a member of the general public, through the web site will use the information gained to support the demonstration experience.

### ***Process***

The Learner Analysis was conducted by interviews with subject matter experts and researching professional literature, observations of gym members and athletes prior to exercise. A profile of the learner was developed from these resources.

The individuals interviewed have expertise in exercise physiology, physical education instruction, coaching and sports training.

## ***Analysis***

### **General Characteristics**

General characteristics are “broad identifying variables such as gender, age, work experience, and ethnicity” (Morrison, Ross, & Kemp, 2004, p. 57). Through observation of the gym’s current active members and discussions with the staff (those who attended during observations, especially those who made repeat visits), we can determine the current trends among gym members:

1. Members are relatively young, and appear to be predominately in their mid 20s through their mid 40s
2. More women attend group exercise classes than men.
3. As noted in the transfer context, more learners appear to be more likely to be interested in cardio exercise than any other activity.

### **Learner Attitudes and Motivation**

According to our interviews with both subject matter experts and potential learners, our expectations are the learner will approach warm-up exercises with interest and attention since participation in a formal exercise program or sport is a chosen interest. The learner will already understand the importance of following an exercise program as it is designed to ensure the health and safety of the learner which will motivate the learner to complete the warm-up exercise portion of the program.

### **Entry Competencies**

Based on SME interviews and research our team would expect the learner to have completed the following:

- Passed a physical examination by a physician
- Chosen an exercise program which would be most beneficial to the learner
- Determined the reason for beginning an exercise program
  - Weight loss
  - General Health
  - Sport Training
  - Weight Lifting
  - Cardiopulmonary Health
- Determined the best time of the day to exercise.

We also know through discussion with potential learners that while the learners understand that warming up is associated with successful workouts, they have a naïve understanding of what types of activities constitute a warm-up, and they primarily list only pre-workout stretching and light cardio as warm-up activities.

Some learners may be new to a formalized exercise program while others may be returning to an exercise program after some time away from a program.

### **Task Analysis**

#### ***Procedure for Task Analysis***

Using the interviews that the team conducted and consulting books by leading strength coaches Ian King (2003) and Charles Staley (2005), the team conducted a

GOMS (goals, operations, methods, selectors) task analysis. A GOMS analysis first looks at the goals of the users (including their subordinate goals), the methods they use to accomplish the goals, the operations used to complete each method, and the selection rules used when making decisions between methods and operations.

While GOMS was initially designed to evaluate the usability of human-computer interaction tasks, instructional technologists have modified it to analyze tasks for the design of instruction. Jonassen, Tessmer, and Hannum (1999) said “The GOMS model is a careful description of the knowledge needed to perform a given task and thus it describes the content of task-oriented documentation.... This approach has been shown to be an efficient way to organize help systems, tutorials, and training programs as well as user documentation” (p. 111).

### ***Outline***

#### **Goal: Warm up for your workout**

- Subgoal 1: Plan to have the best workout yet
- Subgoal 2: Get the body generally ready to work:
  - To elevate body temperature
  - To increase blood flow
  - To lubricate the joints
- Subgoal 3: Rehearse specific muscles, joints, nerves
- Subgoal 4: Avoid fatigue

**Methods & Operations:**

- Method for Subgoal 1: Plan to have the best workout yet (a.k.a mental warmup)
  - Take 1-2 minutes
  - Select a reasonable target for improving 1 or 2 things over the last workout, such as:
    - Improved duration (go longer)?
    - Improved speed (go faster)?
    - Improved reps (about 1-2 reps per set on exercises, using the same weight as you did previously)?
    - Improved form (set a mirror and pay attention to keeping your form solid)?
    - Less rest between sets (keep a stop watch to time yourself)?
    - More weight (about 5-10% over last time on 1-2 exercises you did well)?
    - Pick a safe goal and don't be afraid to modify if it becomes iffy
  - Visualize success
- Subgoal 2: Get the body ready to work (a.k.a. general warmup)
  - Designate time (5-15 minutes)
    - 5 minutes minimum
    - 15 minutes maximum
  - Select exercises to warm up with
    - Option 1: Basic Flexibility

- Neck stretch
  - Tilt head so that ear goes toward shoulder.
  - Turn head so that chin goes toward shoulder.
  - Repeat to other direction.
- Arm circles
  - Make large circles with arms
- Shoulder rolls
  - Arms straight down to side.
  - Shrug shoulders up
  - Roll them back and down
  - Then forward and up, making a circle
- Lower-body twists
  - Lie on your back
  - Extend legs up
  - Bend them so that toes and knees both point to ceiling
  - Twist your torso so that the knees bend to your left and touch the floor
  - Reverse and twist your torso so that the knees bend to your right and touch the floor
  - Return to center and repeat
- Sumo squat and stretch

- Stand with your legs more than shoulder width apart
- Squat down on your haunches
- Grab your toes with your fingers
- Stand up slowly, keeping your hands on your toes
- Raise your hips as far as you can while keeping your hands on your toes (if you feel pain or discomfort, you're stretching too hard)
- Stand and repeat
- Option: Stretch
  - Hamstring stretch
  - Quads stretch
  - Front-body stretch
  - Back stretch
  - Lower-back stretch
- Option: Light Cardio
  - Treadmill walking at an incline
  - Treadmill jogging
  - Jumping jacks
  - Skipping rope
- Option: Calisthenics
  - Walking lunges
  - Ankle jumps

- Jumping jacks
  - Pushups
  - Option: Low-weight circuit
    - Sumo deadlift and high pull
    - Hang clean & press
    - One-arm dumbbell snatch
    - Overhead squats
- Subgoal 3: Rehearse specific movements, muscles, joints, nerves (teach the principle)
  - Cardio: Use 5-10 minutes of your warmup
    - 60% of your target intensity (moderate intensity) is a good guide
  - Low-to-Moderate Weight (weights):
    - Do one set of the first major exercise
  - Higher Weights (weights):
    - Do three warm-up sets of first major exercise for each part of your body at 40%/60%/80%
- Subgoal 4: Avoid fatigue
  - For cardio and general warmups,

### **Selection Rules**

Use the following selection rules when choosing general warmup exercises:

- Selection caveats (on selecting to start the process):
  - Check with doctor before selecting any exercise program

- Stop exercising if you experience the following: irregular pulse, unusual shortness of breath, lightheadedness, excessive fatigue, unusual joint, muscle or ligament pain, nausea, or vomiting
- Be sure you are wearing appropriate shoes and clothing
- Selecting goal for mental warm-up:
  - Select goals based on your own long-term workout goals
  - Select goals based on what you expect to be safe
  - Always err on the side of caution
  - Always make sure you can increase your total reps across multiple sets before you increase weight
  - Never increase weight by more than 10% unless weight is too light for target reps (does not cause significant exertion to lift)
- Selecting time for warmup:
  - The more intense the workout, the longer the warmup should be, the longer and less intense the workout, the shorter it can be
  - Upper-body-only workouts need less general warmup time, but use at least three specific warmups if the weights are heavy (you can do fewer than 8 repetitions)
  - Pick the best warm-up time that will also ensure you can fit the workout into your schedule
- Selecting exercises
  - Be conservative in both the general and specific warmup – do what you're comfortable doing

- Select exercises you enjoy
- Most experts recommend using static stretches as part of the general cardio warmup, but not for the general weightlifting warmup
- Move from less intense (flexibility and stretching) to more intense (calisthenics, circuits, light cardio)
- Target body parts you will use in your workout
- Never exceed the target exertion point during the general warmup

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